

Electronic Supplementary material (ESI) for Journal of Materials Chemistry A
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Electronic Supplementary Information (ESI)

Flexible Metal-organic Frameworks as Superior Cathodes for Rechargeable Sodium-ion Batteries

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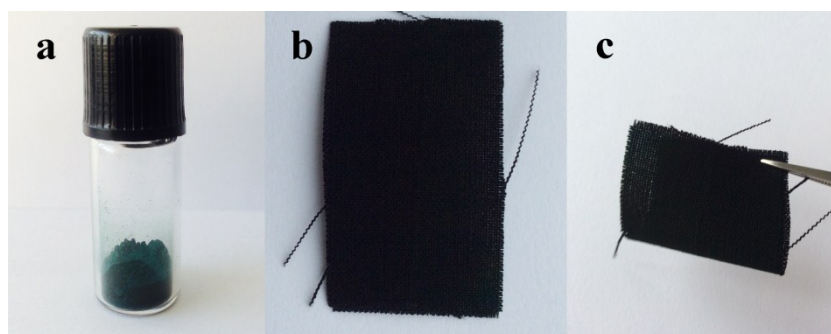


Figure S1. Photographs of (a) bare $\text{FeFe}(\text{CN})_6$ nanoparticles and (b, c) $\text{FeFe}(\text{CN})_6$ /carbonfiber composites.

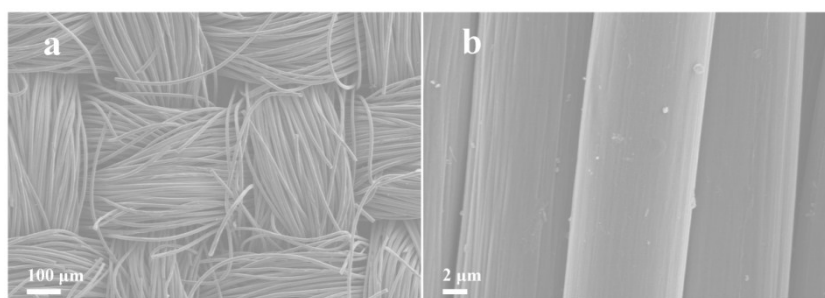


Figure S2. SEM images of acid-treated carbon cloth.

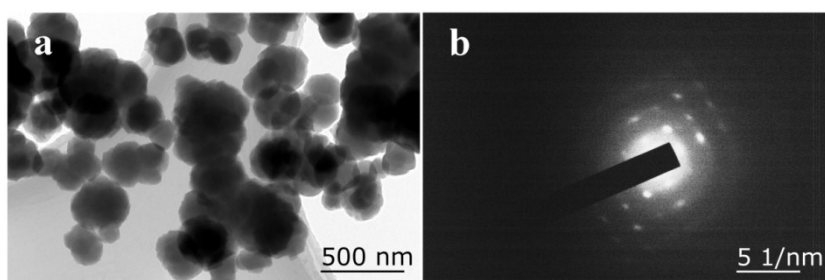


Figure S3. TEM image and SAED pattern of $\text{FeFe}(\text{CN})_6$.

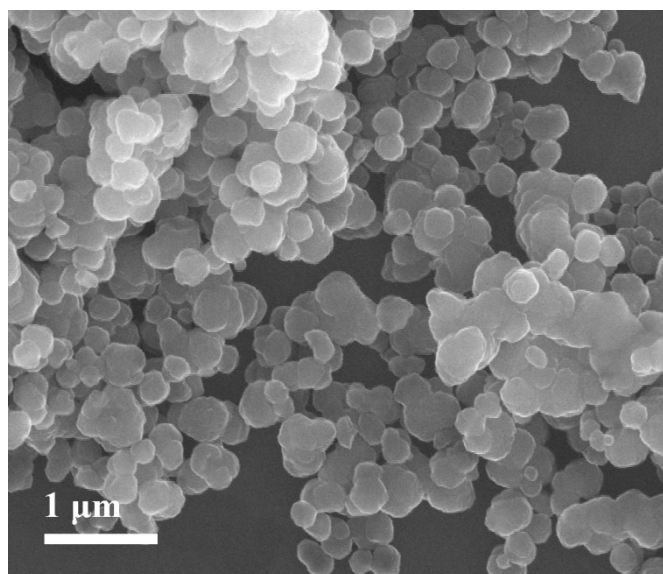


Figure S4. SEM image of bare $\text{FeFe}(\text{CN})_6$ nanoparticles.

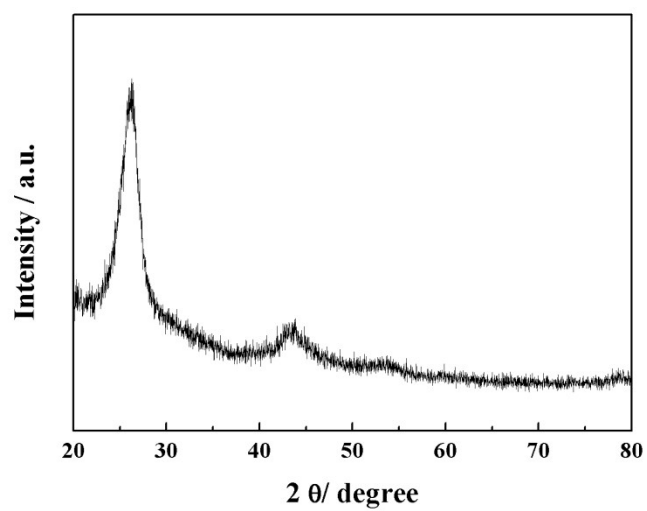


Figure S5. XRD pattern of the carbon textiles.

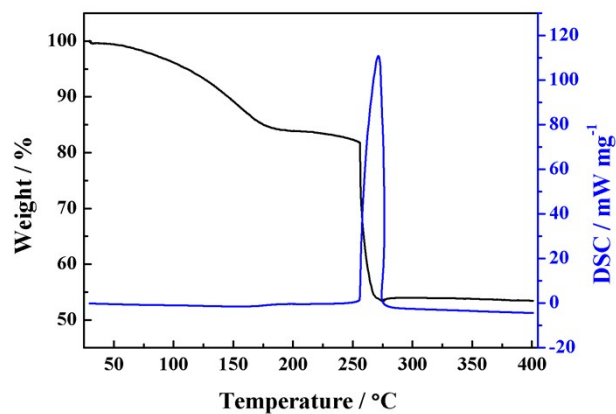


Figure S6. Thermogravimetric curve of $\text{FeFe}(\text{CN})_6$ samples at a rate of $10\text{ }^\circ\text{C min}^{-1}$ under air.

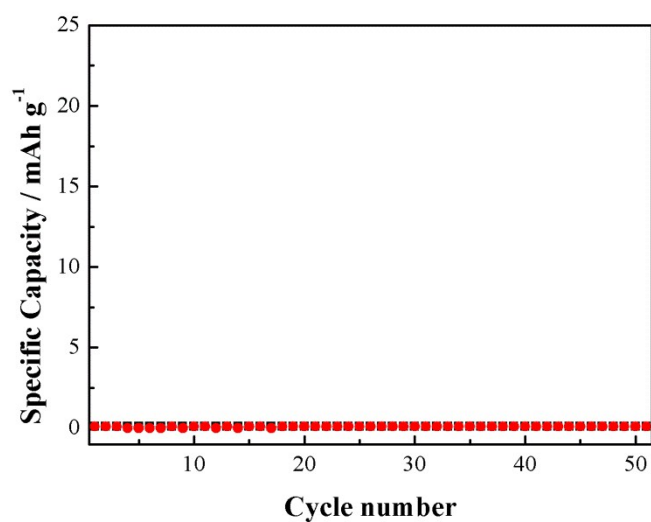


Figure S7. Cycling performance of the carbon textiles at a current density of 50 mA g^{-1} in the voltage window of 2.0-4.0 V.

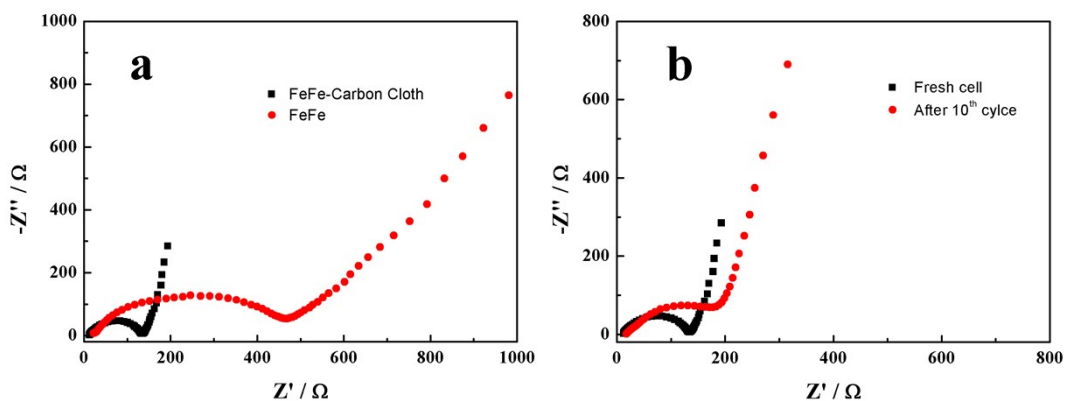


Figure S8. (a) Nyquist impedance plots of the $\text{FeFe}(\text{CN})_6/\text{carbon}$ textiles and bare $\text{FeFe}(\text{CN})_6$ electrodes measured before cycling, (b) Electrochemical impedance spectra of the the $\text{FeFe}(\text{CN})_6/\text{carbon}$ cloth electrode.

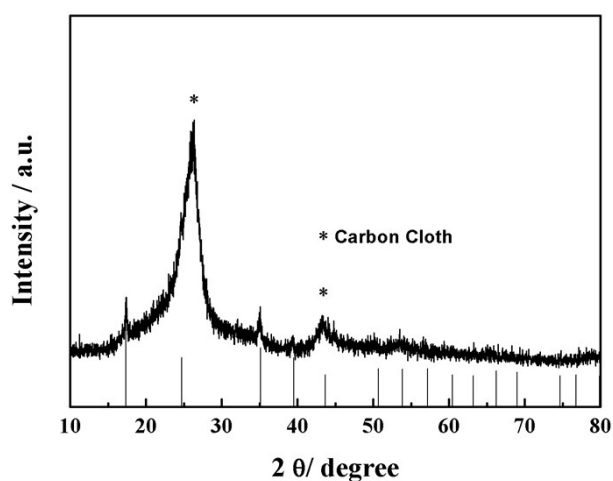


Figure S9. XRD pattern of the $\text{FeFe}(\text{CN})_6/\text{carbon}$ cloth after 50 cycles at a current density of 0.5C.

To examine phase structure of the electrodes after cycling, X-ray diffraction (XRD) was investigated using a Rigaku Miniflex II diffractometer using $\text{Cu K}\alpha$ radiation operated at 30 kV and 15 mA. Figure S9 shows XRD pattern of the $\text{FeFe}(\text{CN})_6/\text{carbon}$ textiles after 50 cycles at a current density of 0.5C in the voltage range of 2.0-4.0 V.

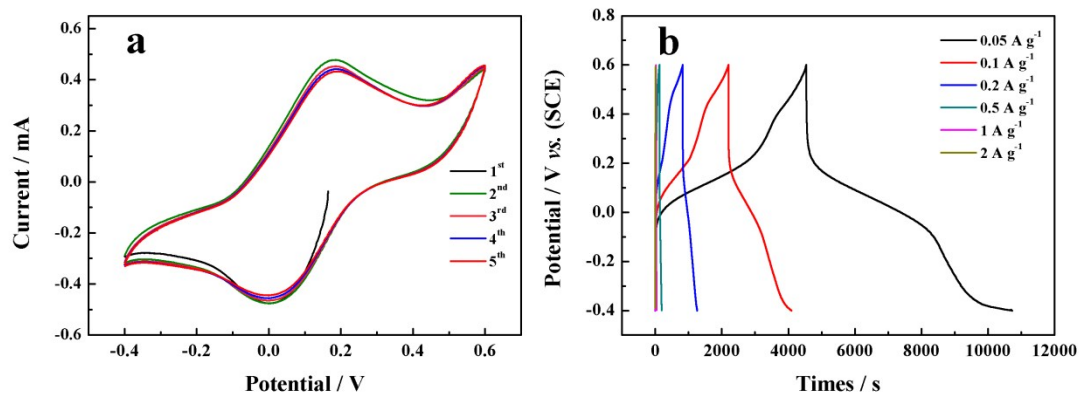


Figure S10. Aqueous sodium-ion battery performance of FeFe(CN)₆/carbon cloth composites assessed from three-electrode measurements in 1 M NaNO₃ (pH=2): a) CV curves, b) galvanostatic charge-discharge voltage profiles at different current densities.

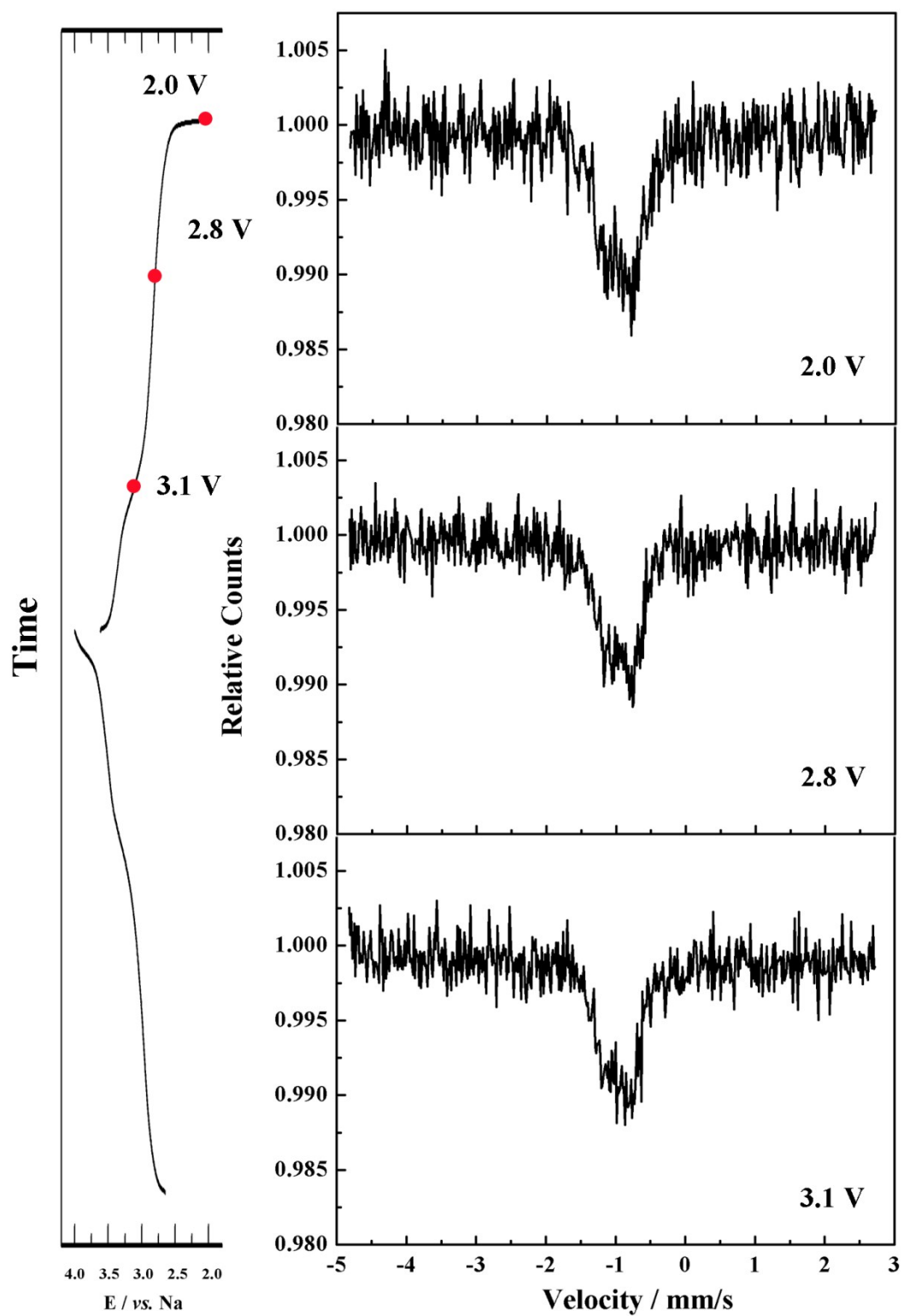


Figure S11. Galvanostatic charge-discharge curves and Mössbauer spectra of the $\text{FeFe}(\text{CN})_6$ electrode discharged at different depths (Voltage = 2.0, 2.8, and 3.1 V).