Electronic Supplementary Material (ESI) for Journal of Materials Chemistry A.

Long Life and High-Rate Berlin Green $FeFe(CN)_6$ Cathode Material for Nonaqous Potassium-ion Battery

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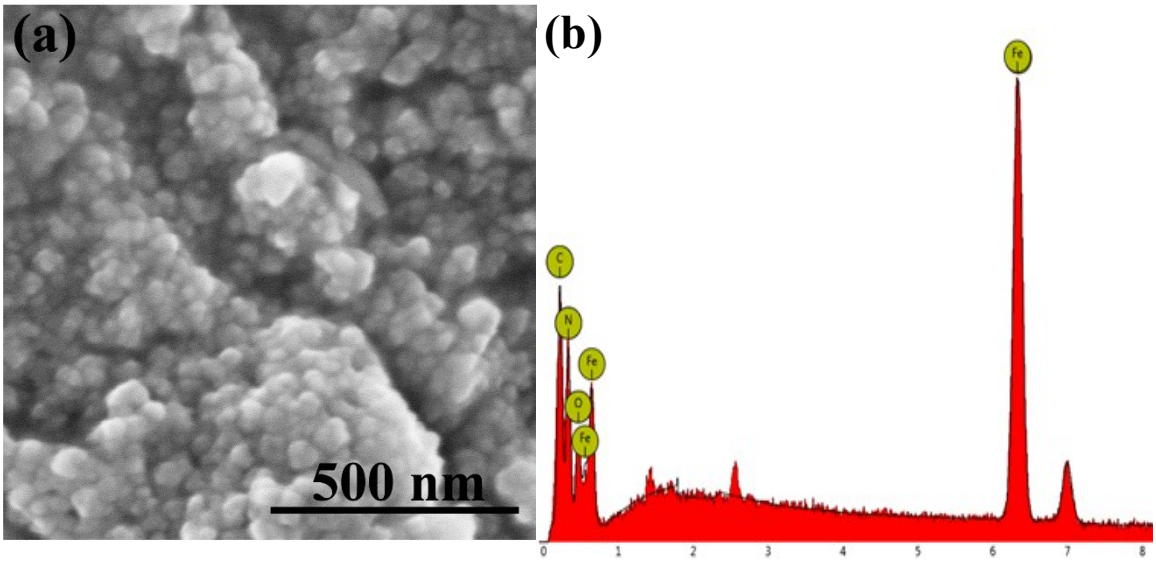

Figure S1 (a) SEM image and (b) EDS analysis of as-prepared FeHCF.

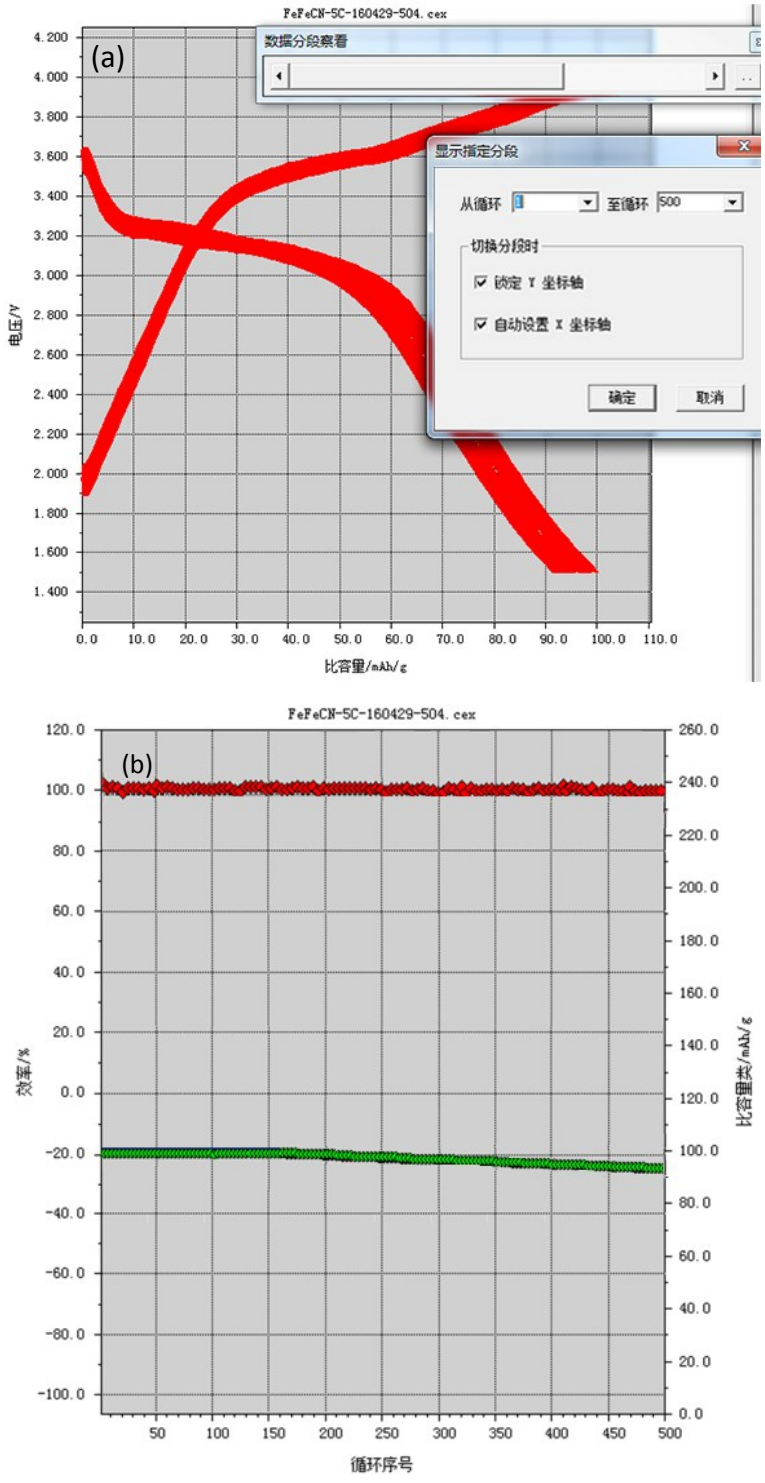

Figure S2 (a) Charge/discharge curves and (b) cyclic performance of FeHCF electrode at a current rate of 5C.

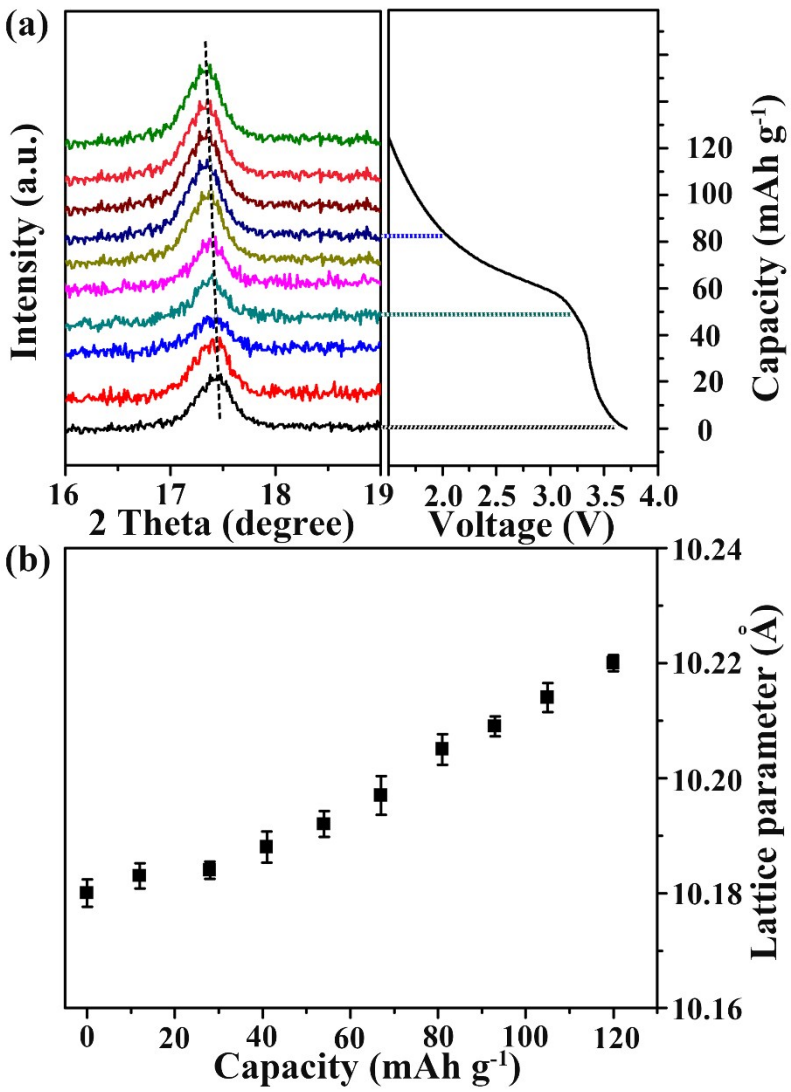

Figure S3. (a) The ex-situ XRD patterns of (200) diffraction peak and (b) calculated lattice parameter at the different discharged states.

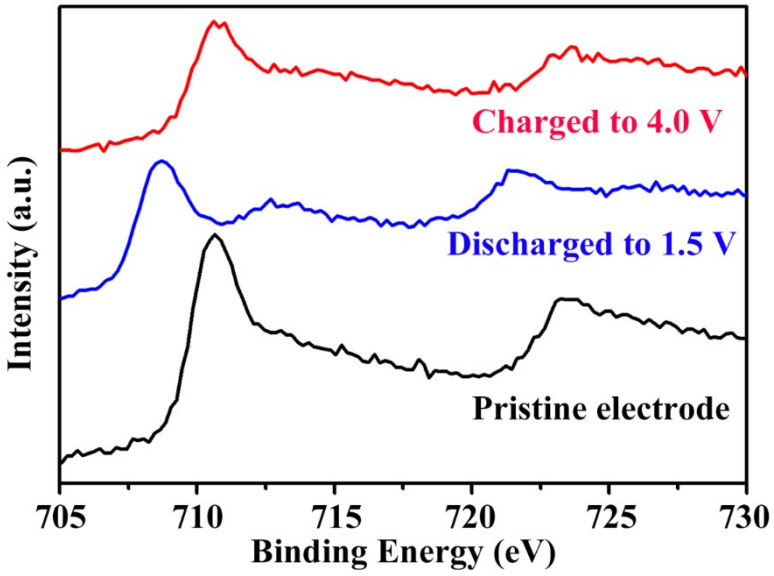

Figure S4. Fe 2p XPS spectra of pristine FeHCF electrode and after the electrode discharged to 1.5 V, charged to 4.0 V.

Table S1. Valence state distribution of Fe in the FeHCF electrode at the different states obtained from Mössbauer spectra.

sample	QS (mm s^{-1})	IS (mm s^{-1})	Linewidth (mm s^{-1-})	Fraction (%)
Pristine	0	-0.153	0.349	Fe^{III}:100
	0.537	0.382	0.395	
Discharged To 1.5 V	1.295	1.039	0.400	Fe^{II}:69.1
	0.654	0.337	0.396	
	0	-0.128	0.270	Fe^{III}:30.9
Charged to 4.0 V	0	-0.138	0.249	Fe^{III}:95.2
	0.554	0.355	0.473	
	1.365	1.082	0.322	Fe^{II}:4.8