Supporting information

An Open-framework Structured Material: $[Ni(en)_2]_3[Fe(CN)_6]_2$ as a Cathode Material for Aqueous Sodium and Potassium Ion Batteries

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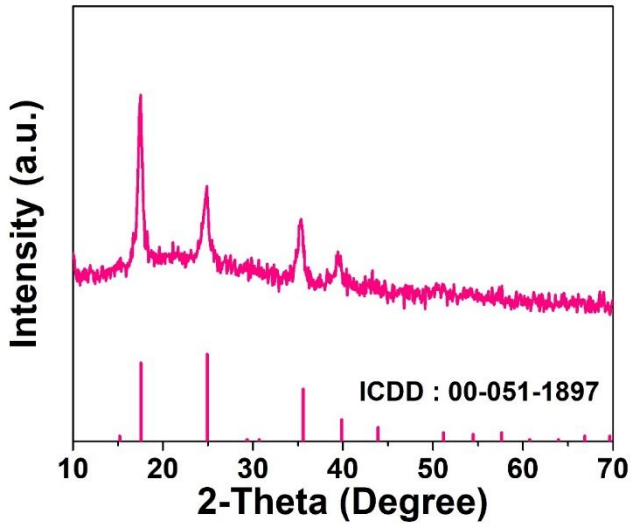

Figure S1. The XRD pattern of NiHCF.

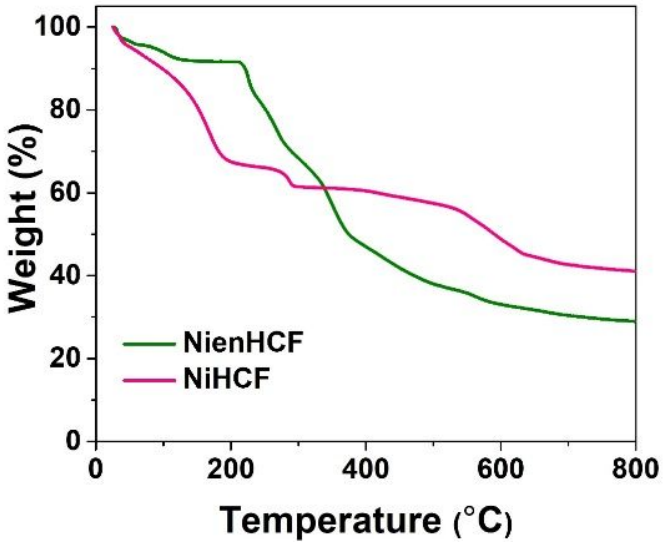

Figure S2. The thermogravimetric analysis results of NienHCF and NiHCF.

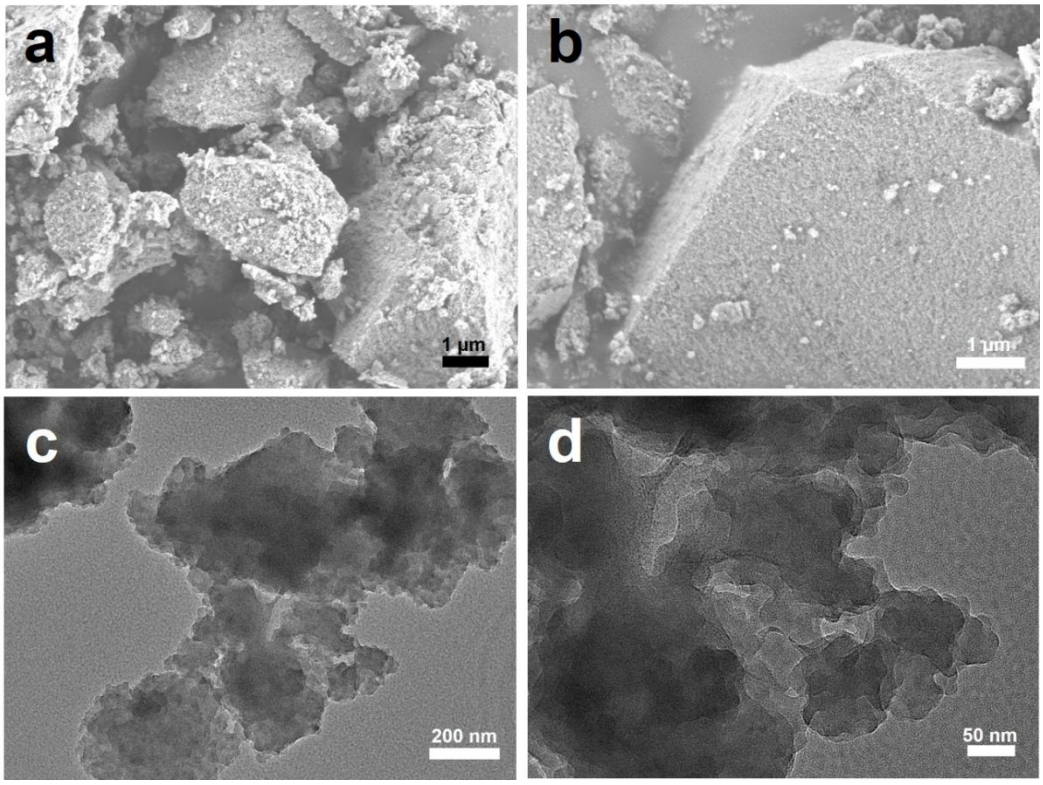

Figure S3. SEM (a and b) and TEM (c and d) images of NiHCF.

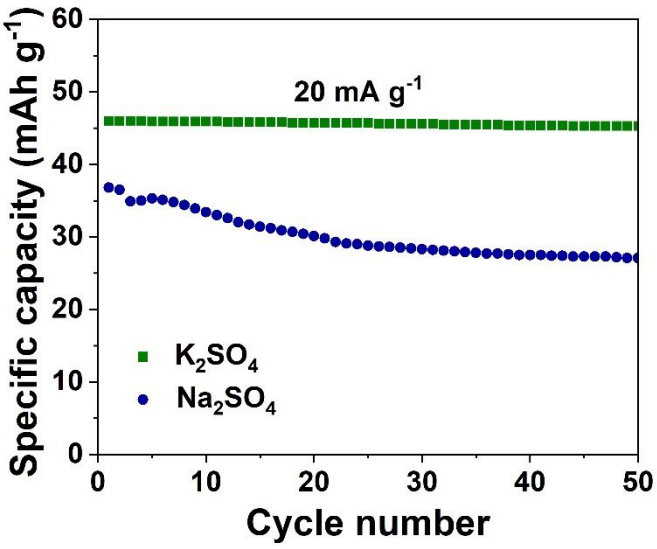

Figure S4. The cycle performance of NienHCF at 20 mA g^{-1}.

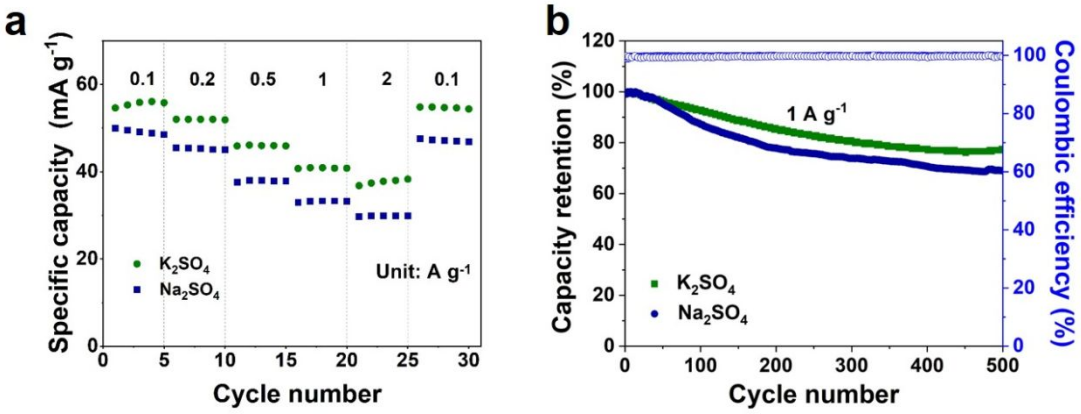

Figure S5. The rate (a) and cycle (b) performances of pure NiHCF in 0.5 M K_2SO_4 and Na_2SO_4 electrolytes.

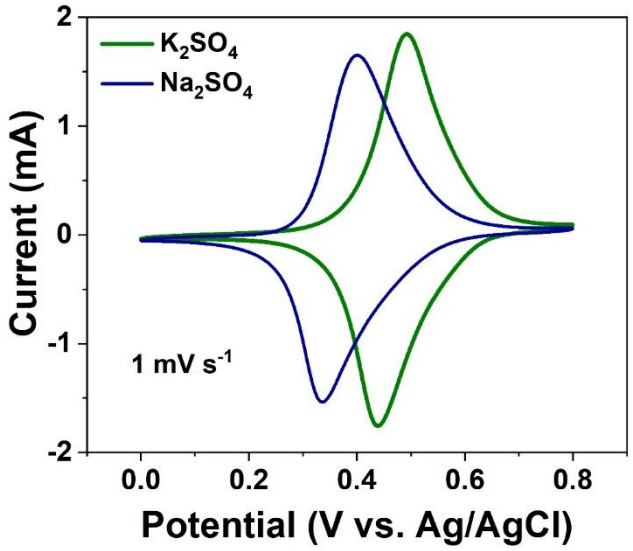

Figure S6. CV curves of NiHCF in 0.5 M K_2SO_4 and Na_2SO_4.

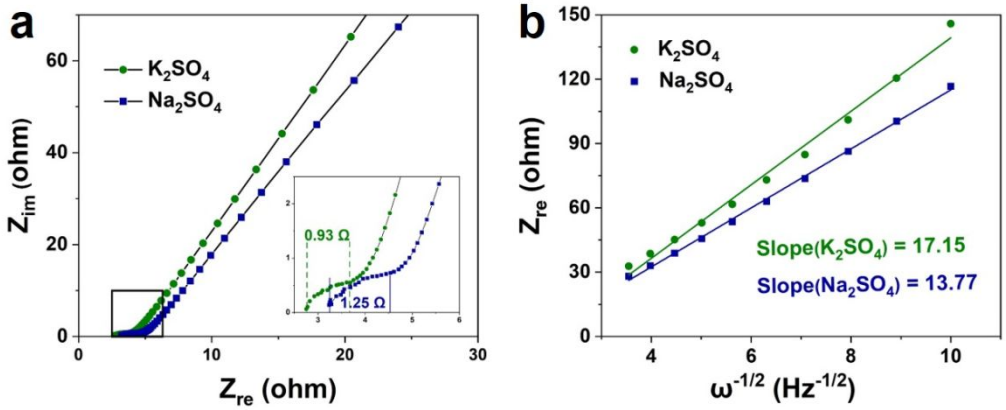

Figure S7. Nyquist plot of NienHCF (a) and Z_{re} vs. $\omega^{-1/2}$ of NienHCF (b) in 0.5 M K_2SO_4 and

Na_2SO_4.

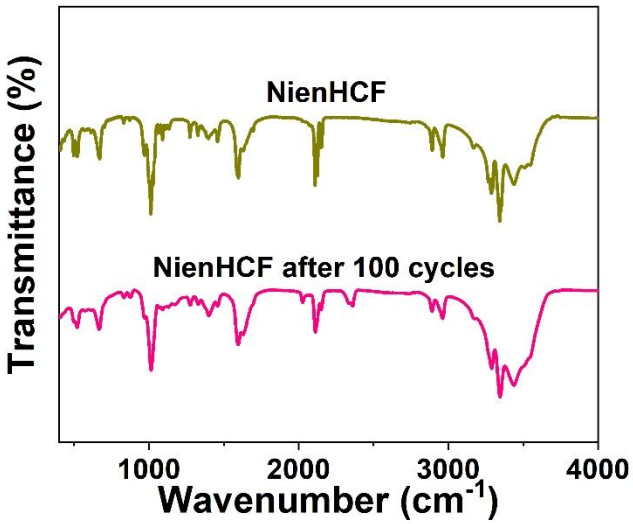

Figure S8. The FTIR spectra of original NienHCF and NienHCF after 100 cycles at 0.5 A g^{-1}.

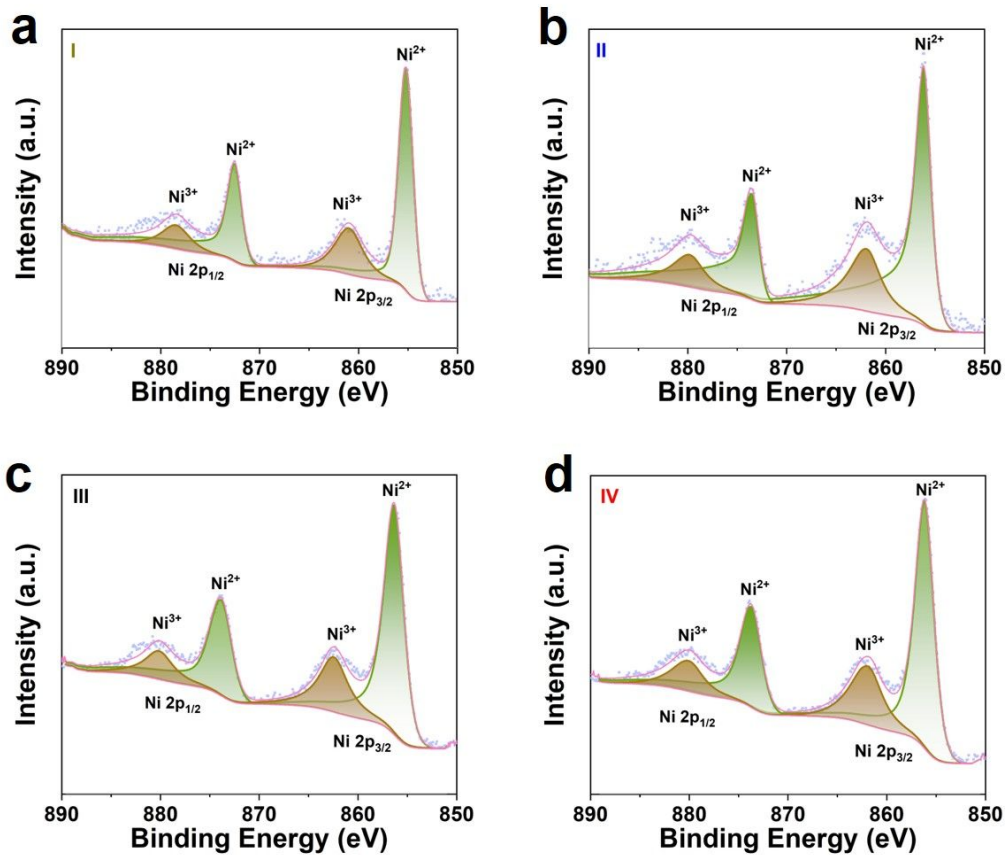

Figure S9. The XPS spectra of Ni 2p for NienHCF at different discharge states in Figure 4(a).

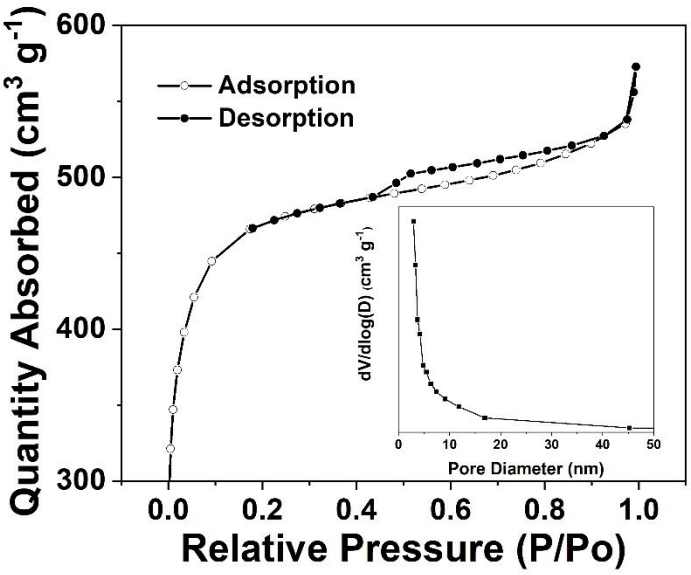

Figure S10. N_2 sorption isotherms and pore size distribution of AC.

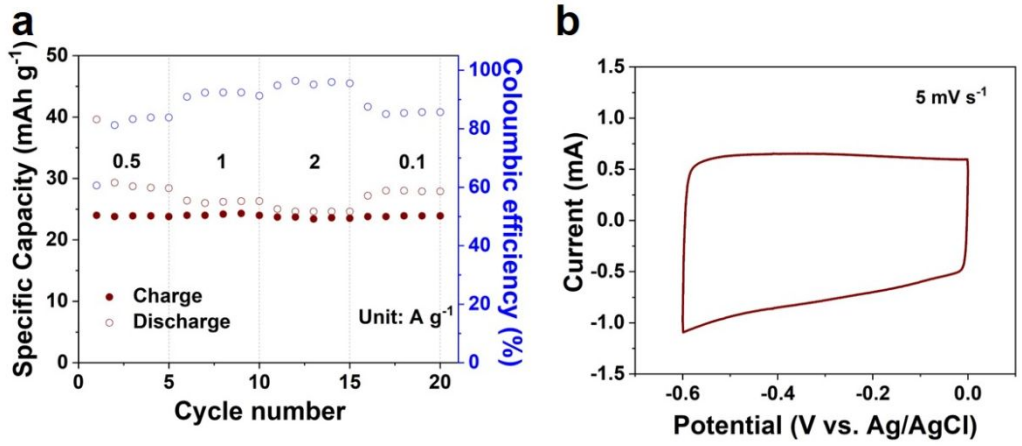

Figure S11. Rate performance (a) and CV curves (b) of AC at 5 mV s^{-1} scan rate.

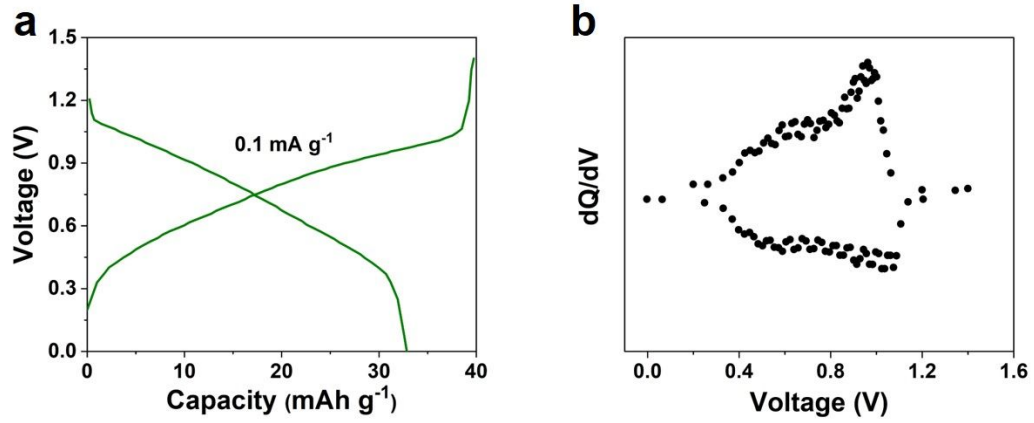

Figure S12. The charge-discharge profiles (a) and DQ/dV (b) of NienHCF//AC full cell.

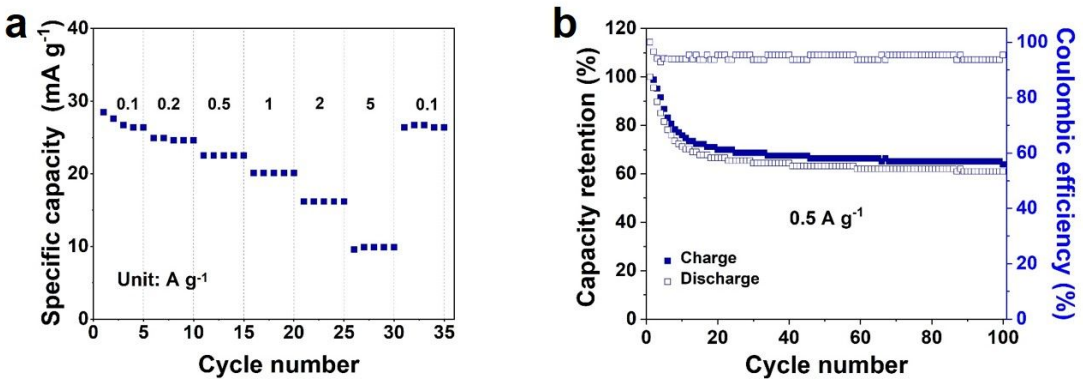

Figure S13. The rate (a) and cycling (b) performances of sodium ion full battery.

Table S1. Lattice parameters of $[Ni(en)_2]_3[Fe(CN)_6]_2$ after Rietveld refinement

Phase	$[Ni(en)_2]_3[Fe(CN)_6]_2$
Crystal system	Triclinic
Space group	P1
Lattice constants:	-
a ()	9.7121
b ()	16.0264
c ()	7.4558
Cell volume ($Å^3$)	1071.679
R_p	3.34%
R_{wp}	4.53%
χ^2	1.528