Supplementary Information

Encapsulation of Zinc Hexacyanoferrate Nanocubes with Manganese Oxide Nanosheets for High-performance Rechargeable Zinc-ion Batteries

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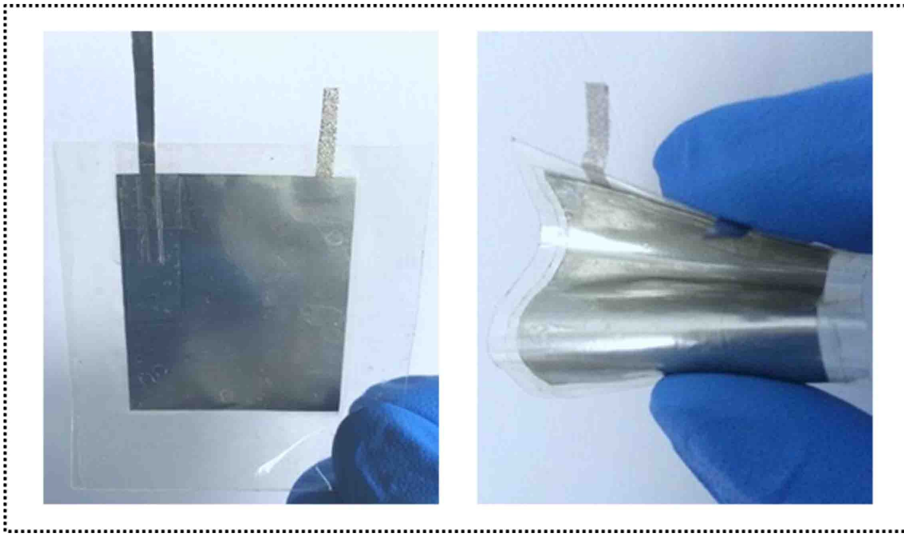

Figure S1. Photographs of the flexible Zn-ion battery.

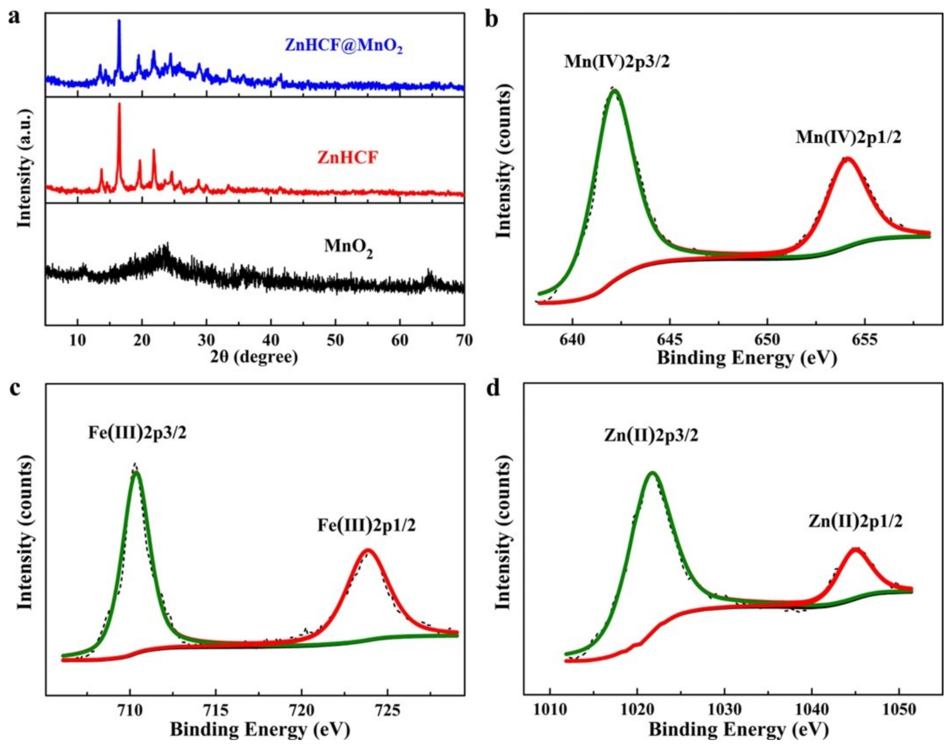

Figure S2. (a) XRD patterns of MnO_2, ZnHCF and ZnHCF@MnO_2. High-resolution XPS spectra of (b) Mn2*p*, (c) Fe2*p*, and (d) Zn2*p* core levels in ZnHCF@MnO_2.

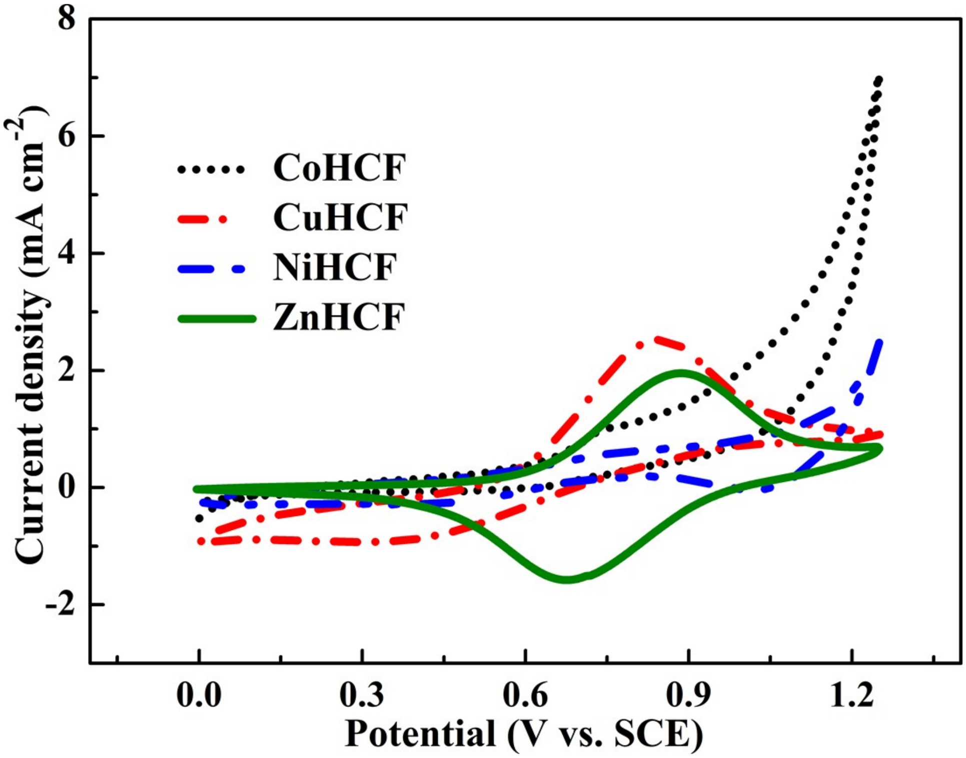

Figure S3. Cyclic voltammograms (5 mV s^{-1}) of different Prussian blue analogues in a three-electrode cell in $ZnSO_4$ aqueous solution.

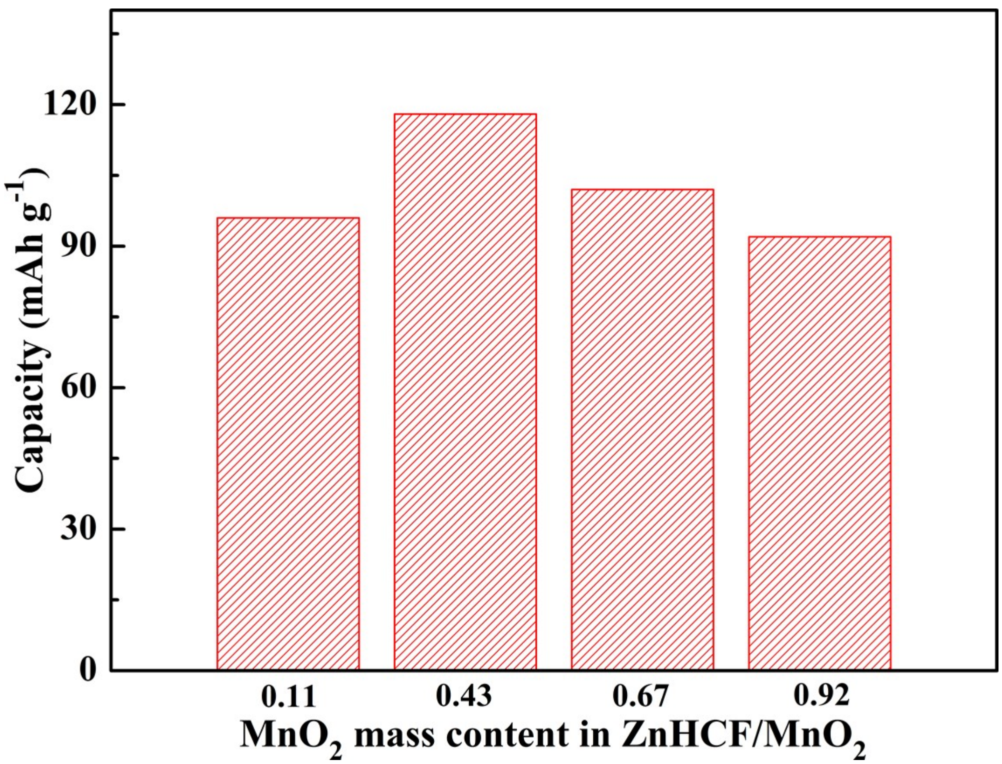

Figure S4. Galvanostatic charge-discharge curves of ZnHCF@MnO_2 composites with different amounts of MnO_2 at 100 mA g^{-1}.

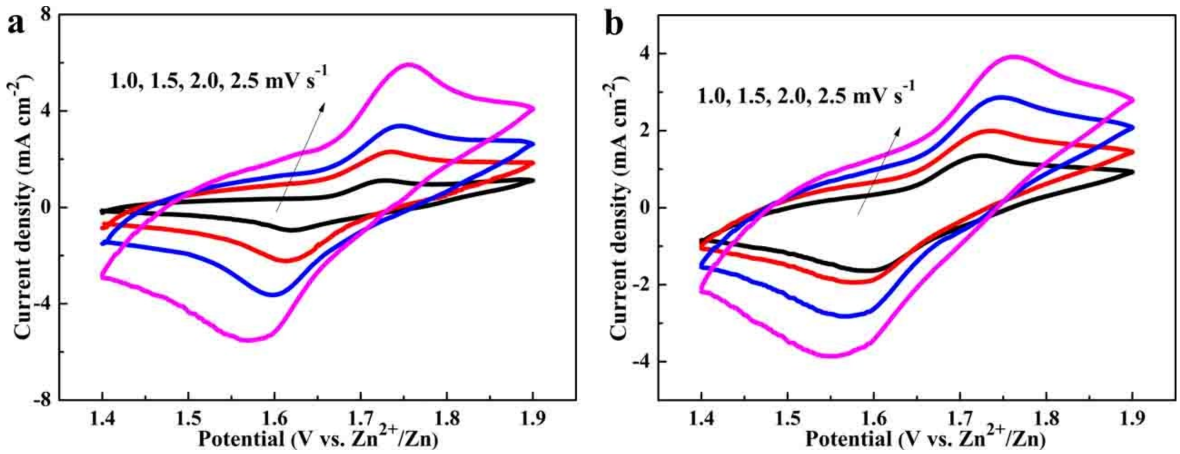

Figure S5. CV curves of the (a) ZnHCF and (b) MnO_2 in 0.5 M $ZnSO_4$ solution electrodes at different sweep rates.

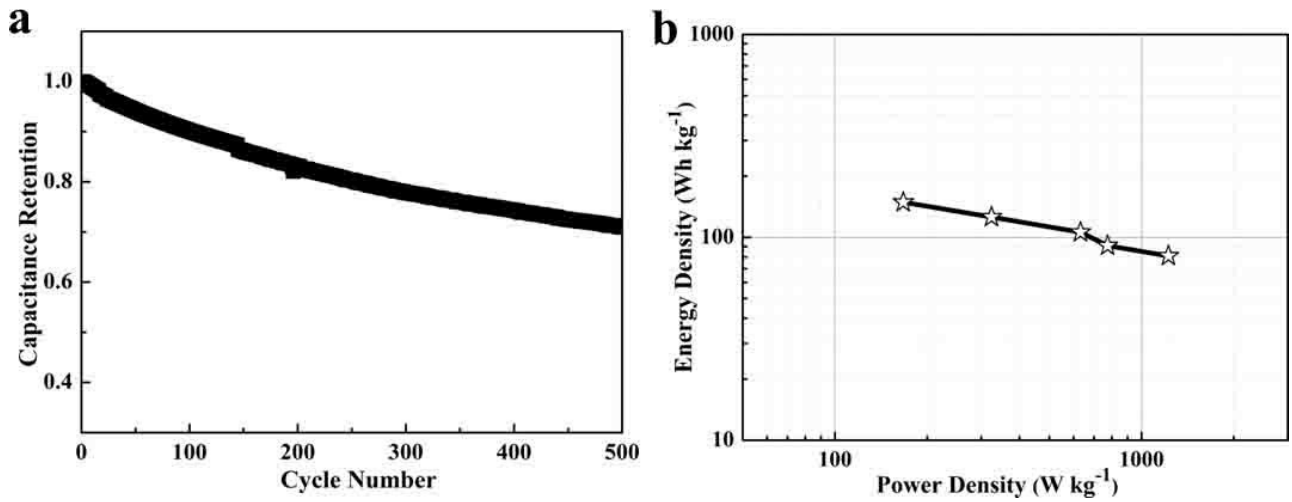

Figure S6. (a) Long cycling life of flexible Zn-ion batteries (400 mA g^{-1}). (b) A Ragone plot of the flexible solid-state battery.

Table S1 Comparison of the electrochemical performance of zinc-ion batteries.

Zinc-ion batteries	Electrolyte	Average operating voltage (V)	Energy density (Wh kg^{-1})	Cycling stability/cycles	Ref.
NiHCF//Zn	Aqueous	1.5	62.9	81%/1000	J. Power Sources, 2016, 321, 257
CuHCF//Zn	Aqueous	1.73	56.3	96%/110	ChemSusChem, 2015, 8, 481
$Na_3V_2(PO_4)_3$/C//Zn	Aqueous	1.42	112	68%/200	J. Power Sources, 2016, 308, 52
V_2O_5//Zn	Aqueous	0.9	144	85%/120	Adv. Energy Mater., 2016, 6, 1600826
NaFe-PB//Zn	Aqueous	1.2	100	80%/1000	J. Power Sources, 2017, 355, 18
$Na_{0.95}MnO_2$//Zn	Aqueous	1.5	78	92%/1000	Chem. Commun., 2014, 50, 1209
α-MnO2//Zn	Aqueous	1.3	not shown	100%/100	Angew. Chem. Int. Ed., 2012, 51, 933
ZnHCF//Zn	Aqueous	1.7	100	80%/100	Adv. Energy Mater., 2014, 1400930
ZnHCF@MnO_2//Zn	**Solid**	**1.7**	**149**	**71%/500**	**This work**
	Aqueous	**1.7**	**-**	**77%/1000**	