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

Defect engineering via the F-doping of β-MnO_2 cathode to design hierarchical spheres of interlaced nanosheets for superior high-rate aqueous zinc ion batteries

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Table S1. Comparison of specific surface area and pore volume among all samples.

Samples	S_{BET} (m^2 g^{-1})	Total pore volume (cm^3 g^{-1})
Bare MnO_2	14.86	0.08
4F-MnO_2	26.88	0.09
5F-MnO_2	79.37	0.15
6F-MnO_2	53.84	0.11

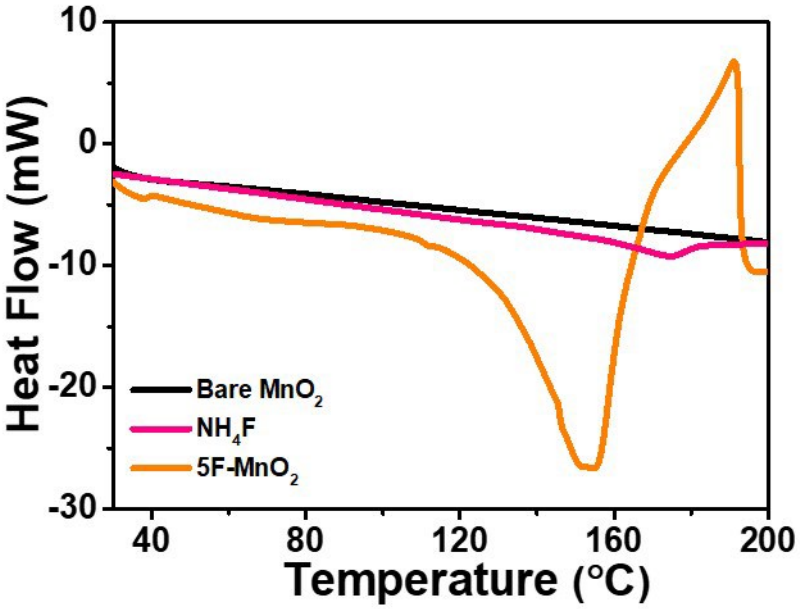

Fig. S1. (a) DSC curve of bare MnO_2, NH_4F, and 5F-MnO_2 measured in range from room temperature to 200 °C of air atmosphere.

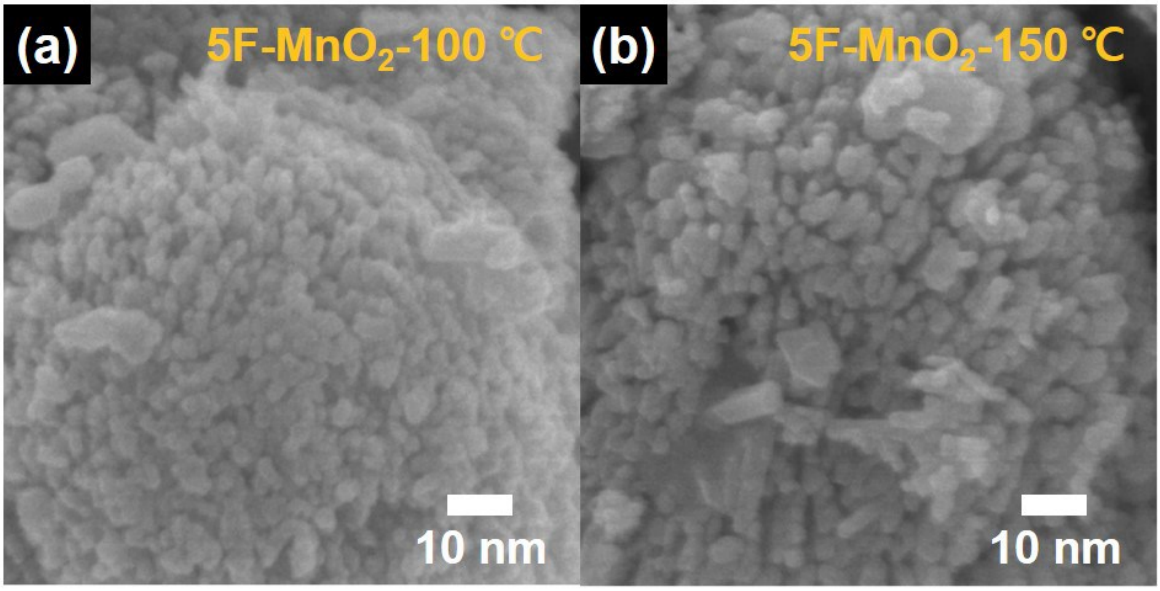

Fig. S2. High-magnification SEM images of 5F-MnO_2 obtained at different calcination temperature of (a) 100 °C and (b) 150 °C.

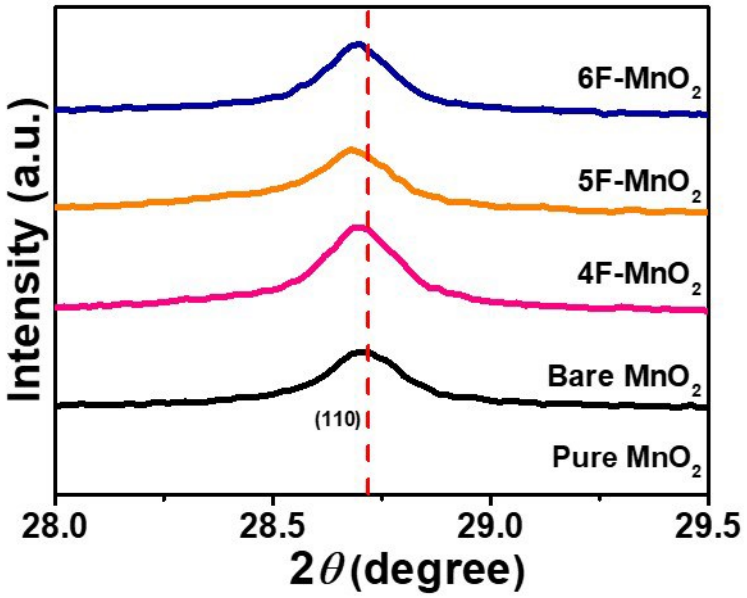

Fig. S3. Enlarged XRD patterns of all samples.

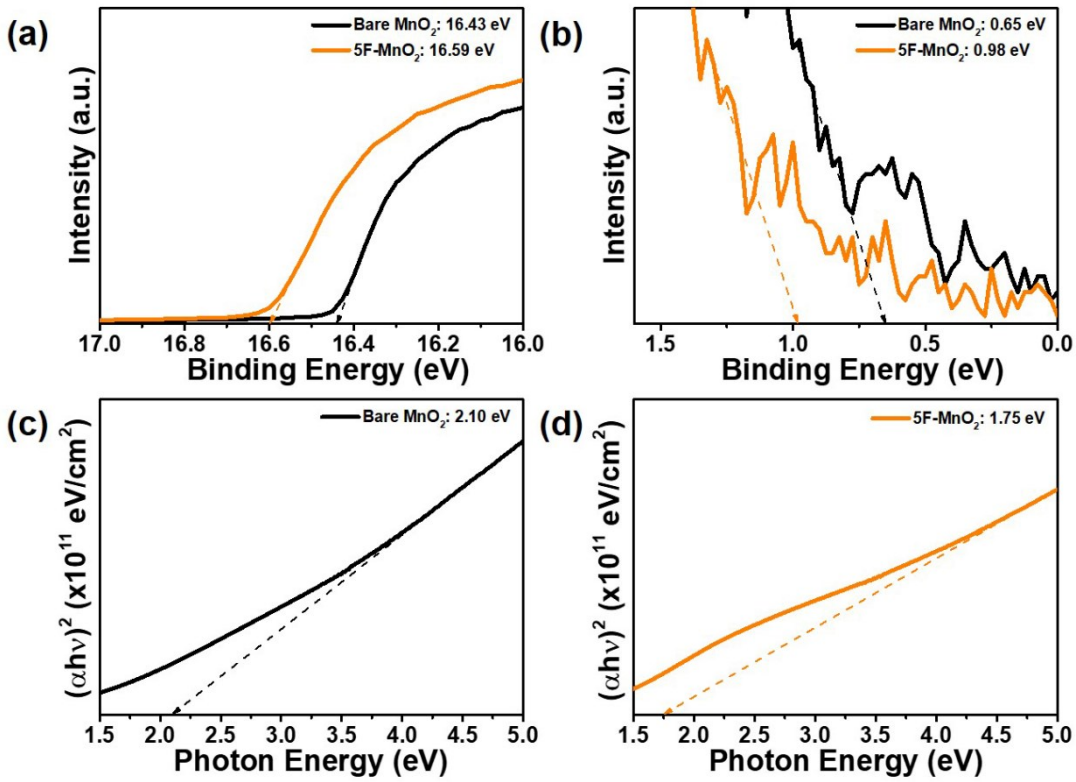

Fig. S4. (a) UPS spectra, (b) VBM spectra, and (c and d) curve of $(\alpha h\nu)^2$ *versus* photon energy of bare MnO_2 and 5F-MnO_2.

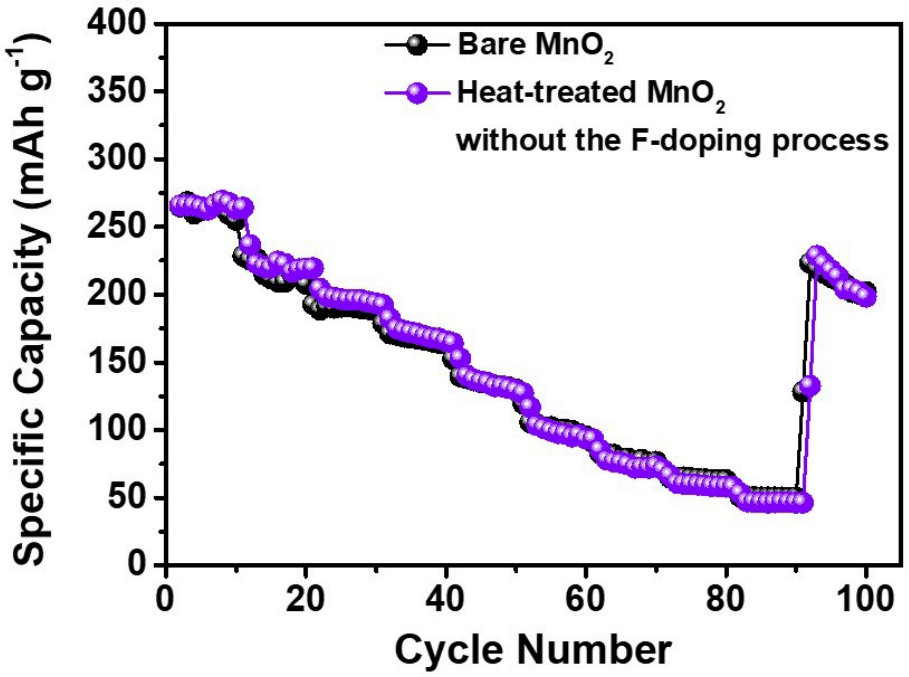

Fig. S5. Comparison of the rate performances between bare MnO_2 and heat-treated MnO_2 without the F-doping process.