

## Supplementary Materials

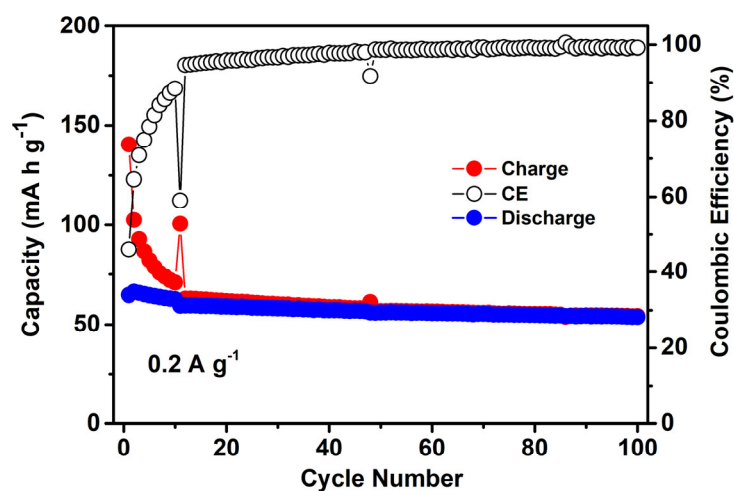
# Vanadium Hexacyanoferrate as a High-Capacity and High-Voltage Cathode for Aqueous Rechargeable Zinc Ion Batteries

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**Figure S1.** The cycling performance of the Zn//VHCF battery in 3 M  $\text{Zn}(\text{CF}_3\text{SO}_3)_2$  electrolyte at 0.2  $\text{A g}^{-1}$  with a voltage window between 1.2 V and 2.0 V.

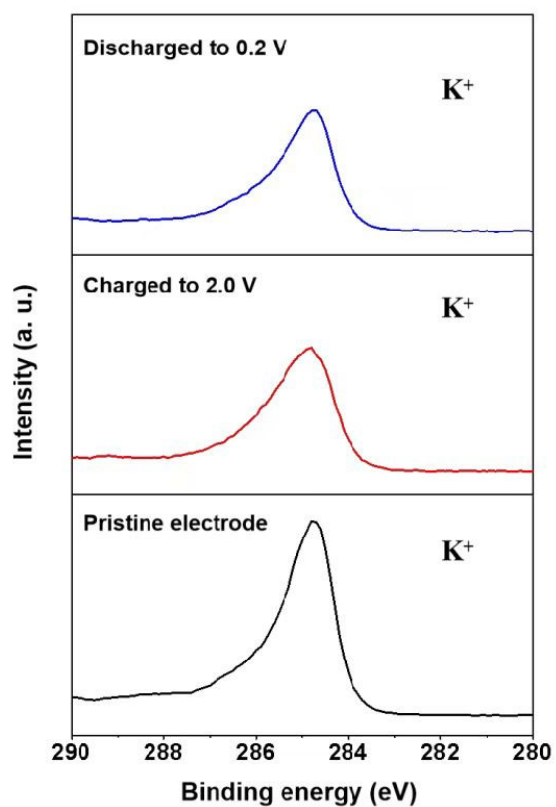


Figure S2. K 1s XPS regions for the pristine, charged and discharged VHCF electrodes.

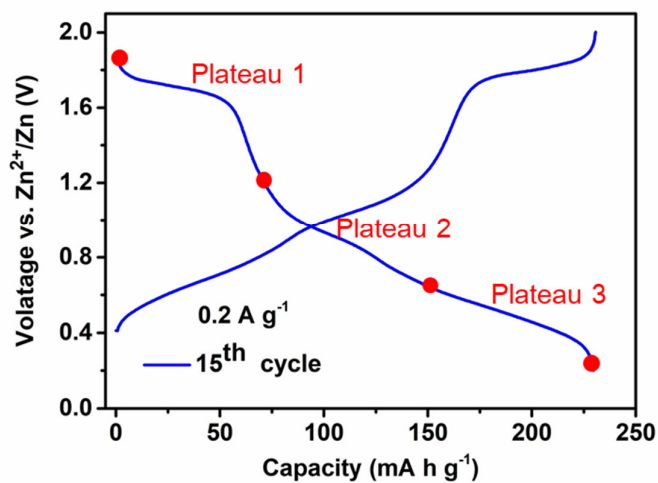
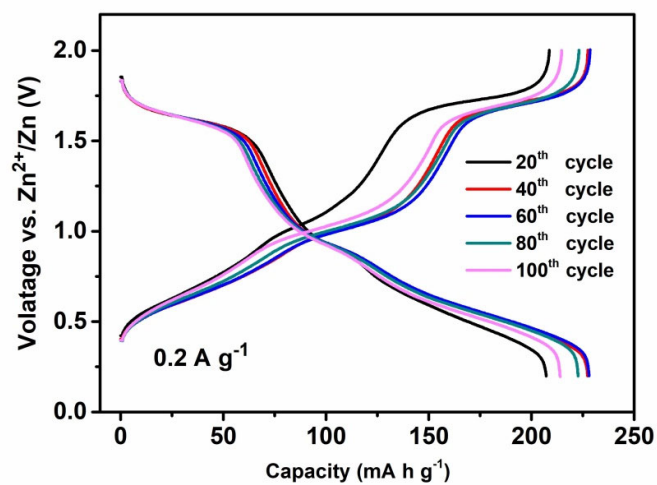
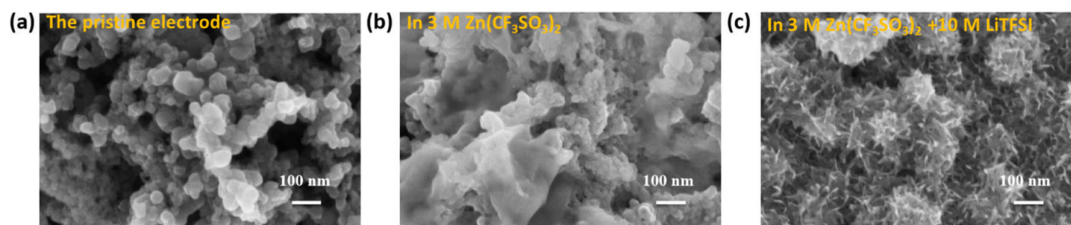


Figure S3. The charge/discharge profiles of the VHCF//Zn battery in 3 M  $Zn(CF_3SO_3)_2$  electrolyte after 15 cycles at  $0.2\ A\ g^{-1}$ .



**Figure S4.** The charge/discharge profiles of VHCF in 3 M  $\text{Zn}(\text{CF}_3\text{SO}_3)_2$  + 10 M LiTFSI electrolyte at  $0.2 \text{ A g}^{-1}$  after 20, 40, 60, 80 and 100 cycles, respectively.



**Figure S5.** The FESEM images of (a) the pristine VHCF electrodes, (b) the VHCF electrode in 3 M  $\text{Zn}(\text{CF}_3\text{SO}_3)_2$  after 1000 cycles, and (c) the VHCF electrode in 3 M  $\text{Zn}(\text{CF}_3\text{SO}_3)_2$  + 10 M LiTFSI after 1000 cycles.