

Supporting Information

Microstructural Engineering of Hydrated Vanadium Pentoxide for Boosted Zinc Ion Thermoelectrochemical Cells

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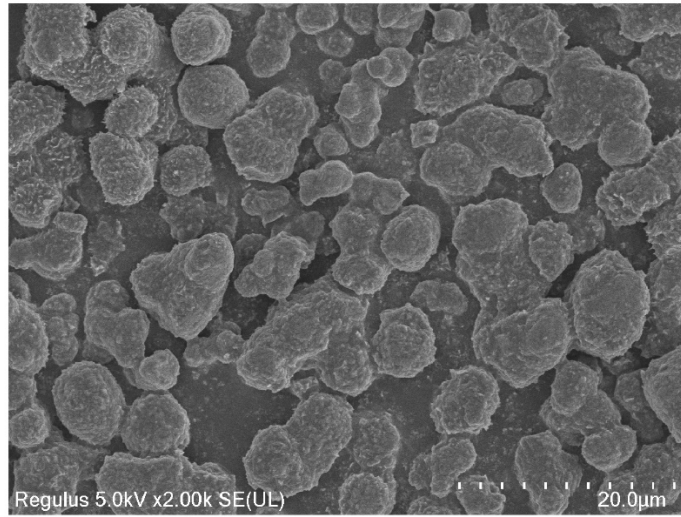


Fig. S1. SEM image of VOMS.

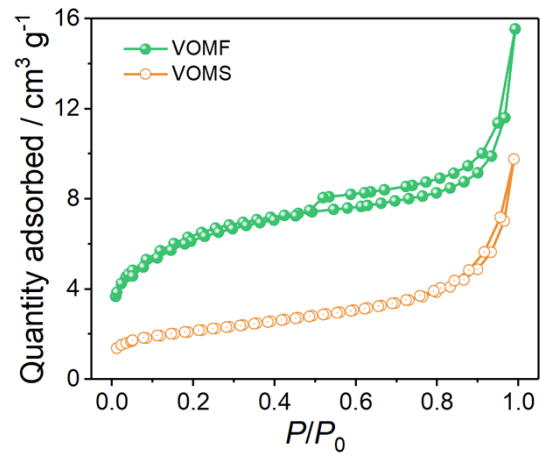


Fig. S2. Nitrogen adsorption-desorption isotherms of VOMS and VOMF samples.

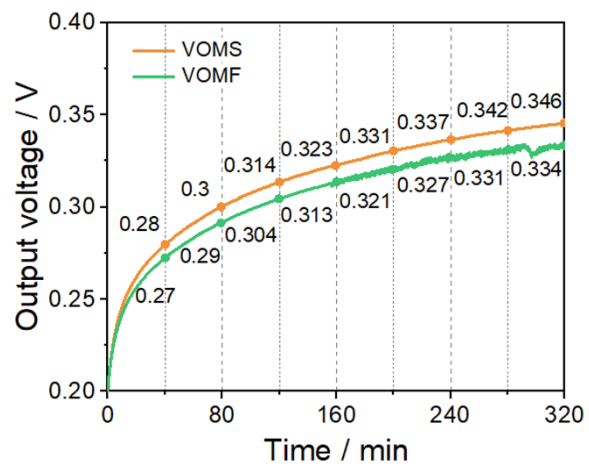


Fig. S3. Voltage profile during electrochemically self-charging.

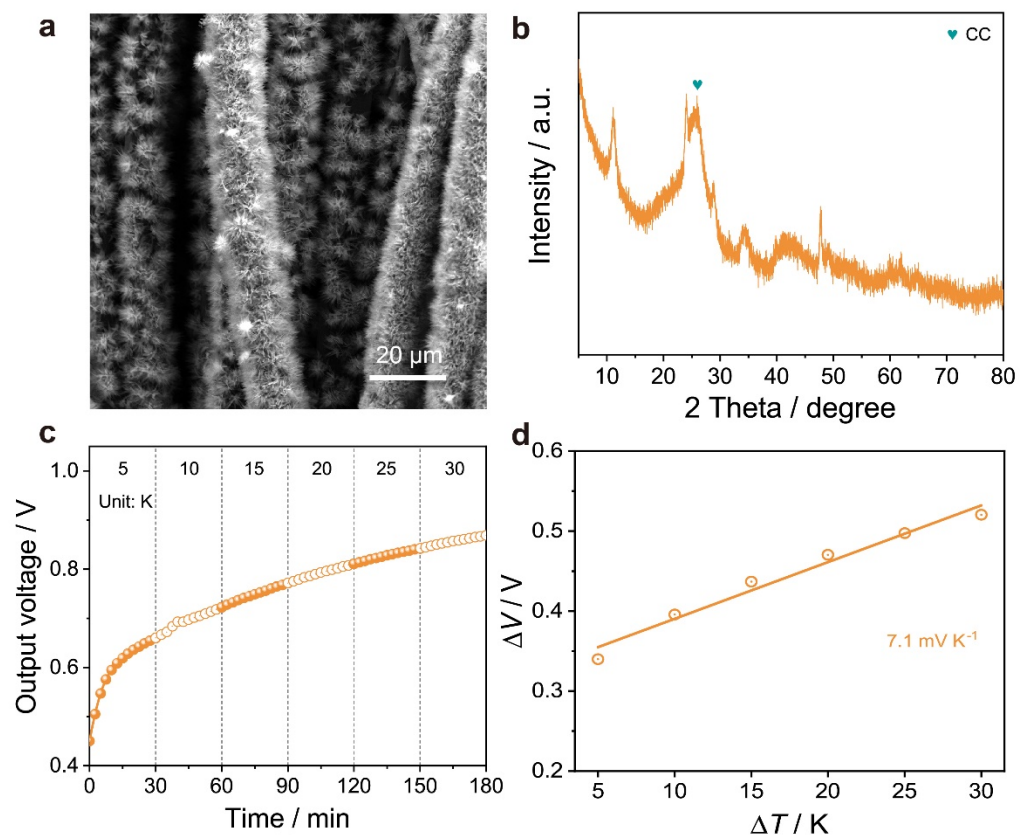


Fig. S4. The structure and performance of VOMF@CC. (a) SEM image. (b) XRD pattern. (c) Thermal charging behavior. (d) Seebeck coefficient.

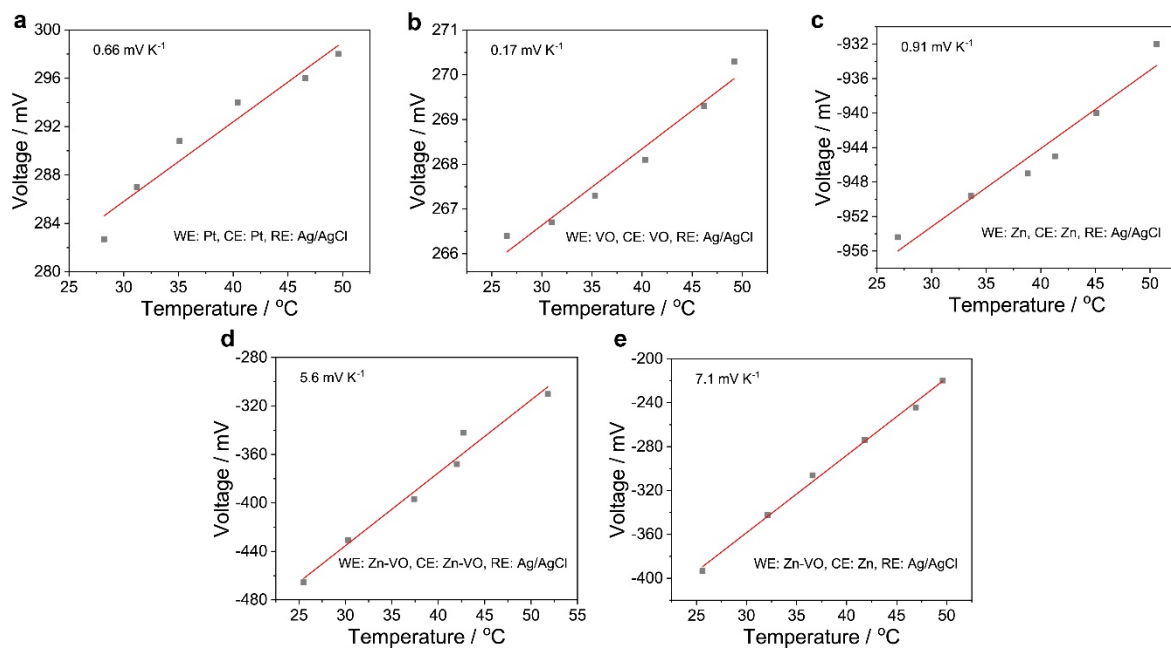


Fig. S5. Temperature dependence of the open-circuit voltage for various systems.

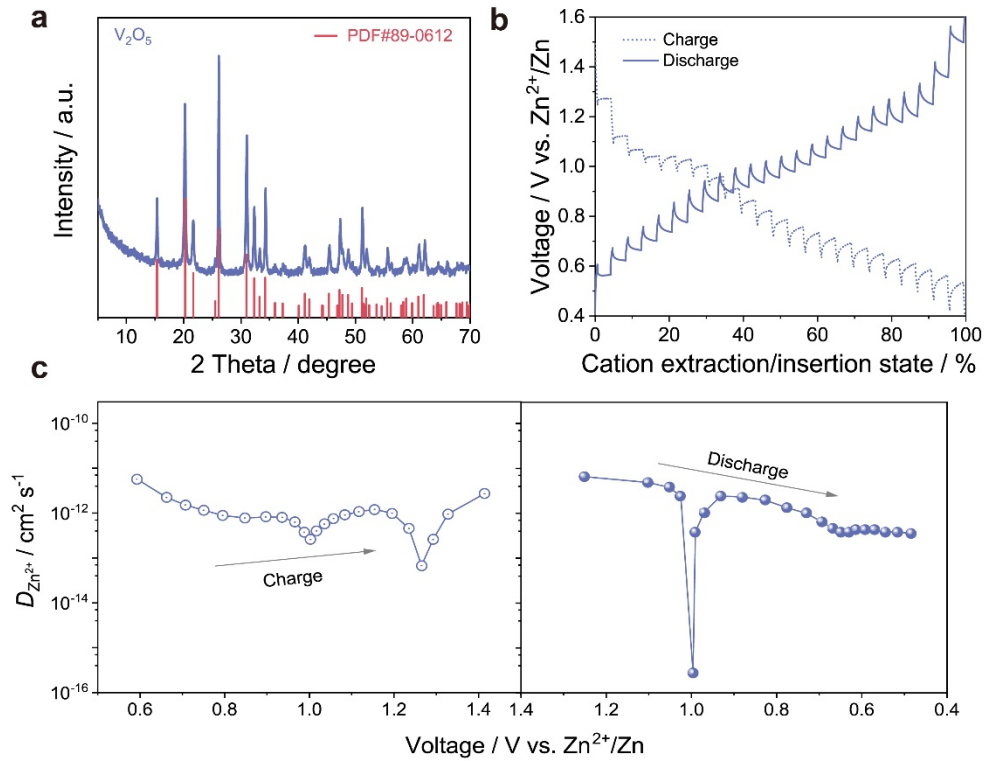


Fig. S6. (a) XRD pattern. (b) GITT curves and (c) calculated Zn^{2+} diffusion coefficients during charge and discharge process for VOMF-400 sample.

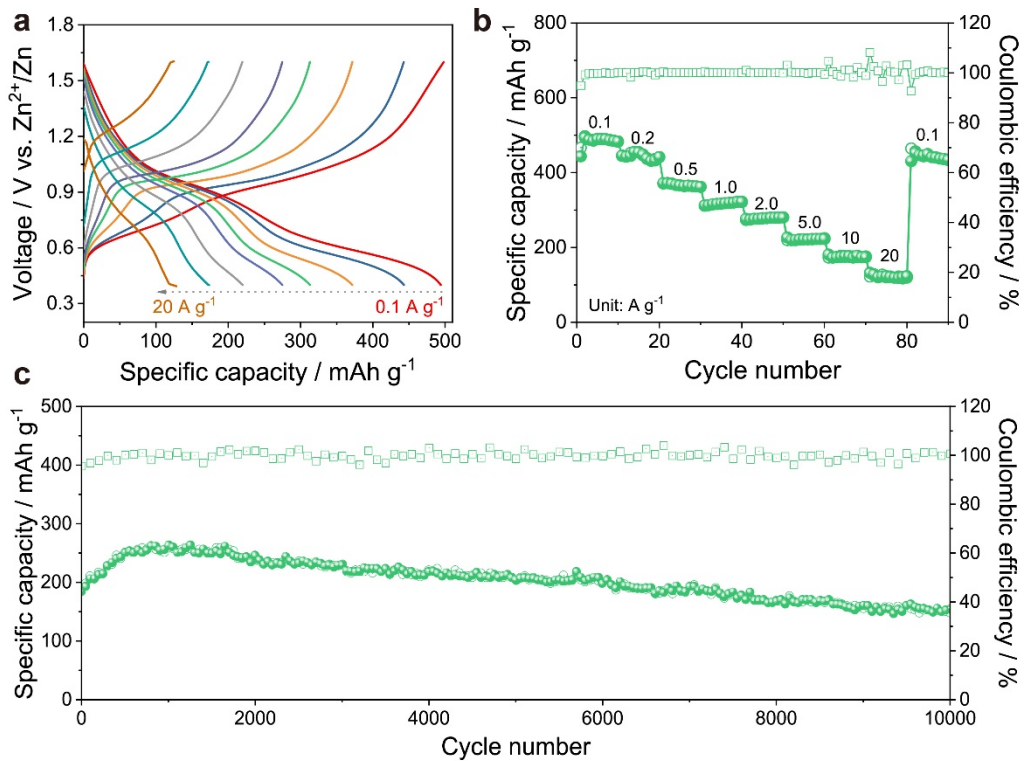


Fig. S7. Electrochemical performances of VOMF based zinc ion batteries. (a) GCD curves at various current densities. (b) Rate capability. (c) Long-term cyclic stability at 10 A g^{-1} .

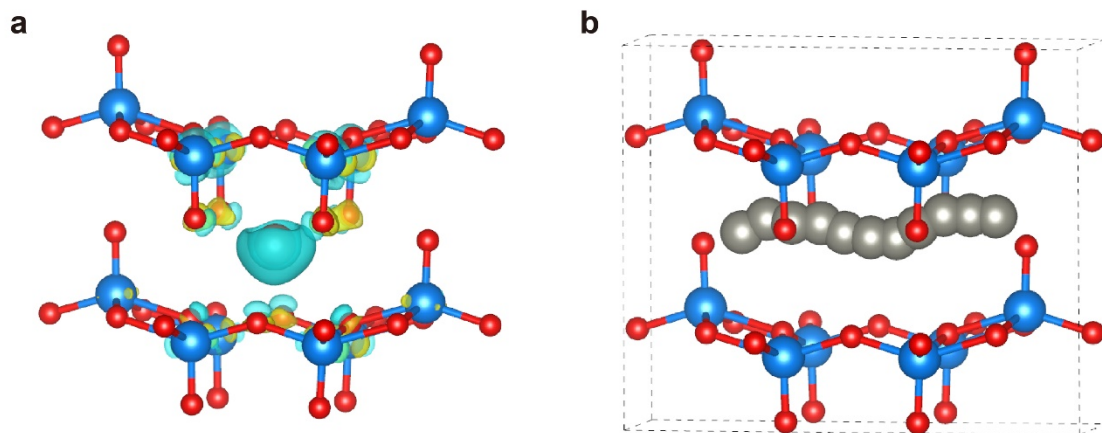


Fig. S8. (a) The electron density difference map after Zn²⁺ intercalated into V₂O₅ and (b) The optimized migration path of Zn²⁺ in V₂O₅.