Supplementary Information

Low-cost Zinc-Alginate-based Hydrogel-Polymer Electrolyte for Dendrite-free Zinc-Ion Batteries with High Performances and Prolonged Lifetime

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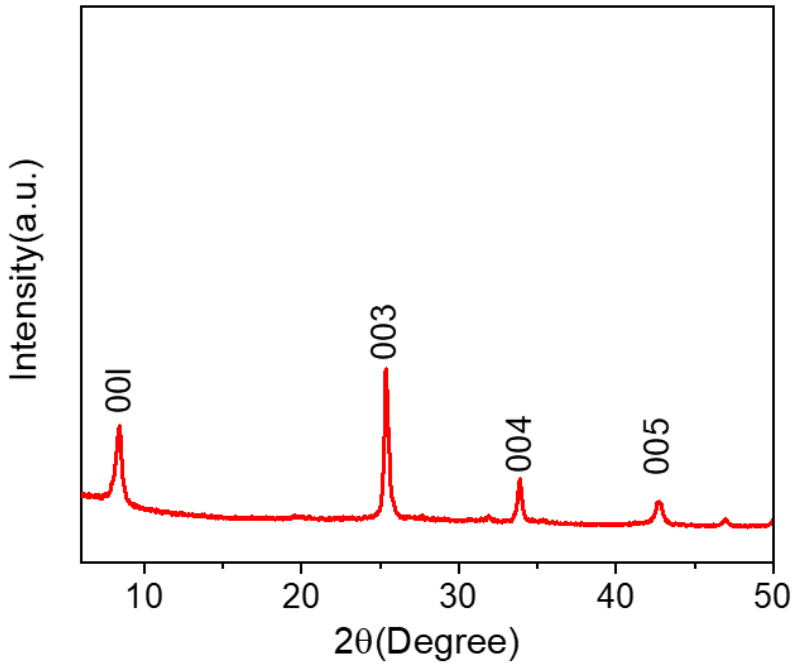


Figure S1. The XRD pattern of the $Ca_{0.24}V_2O_5 \bullet 0.83H_2O$ (CVO) cathode.

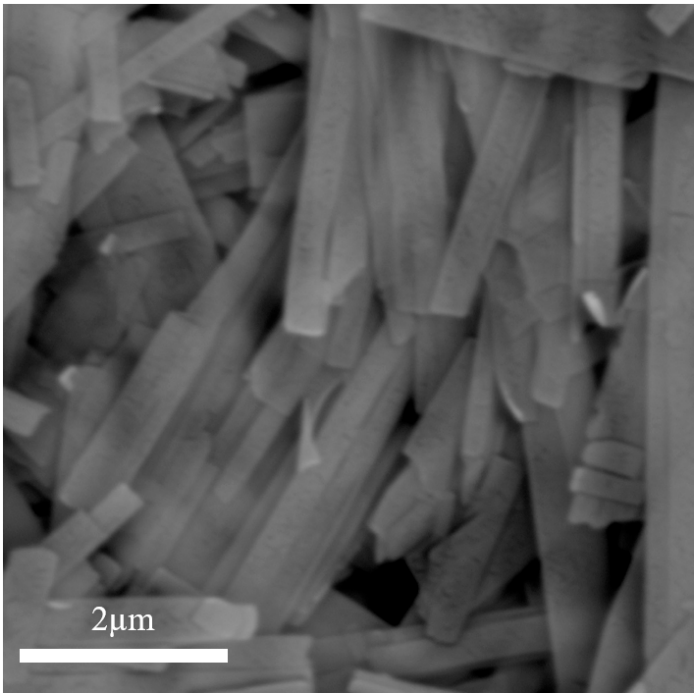


Figure S2. The SEM micrograph of the CVO cathode.

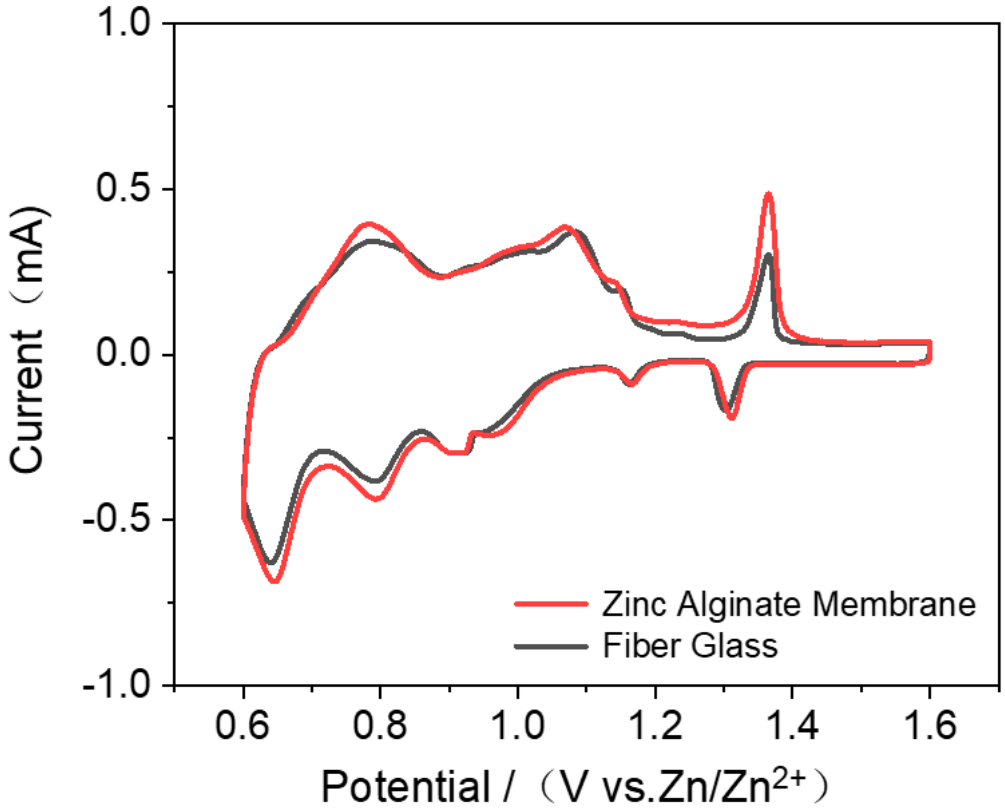


Figure S3. Cyclic voltammetry curves of Zn/ZA-based HGPE/CVO cell and Zn/wet glass fiber separator/CVO cell; scan rate: 0.2 mV s^{-1}.

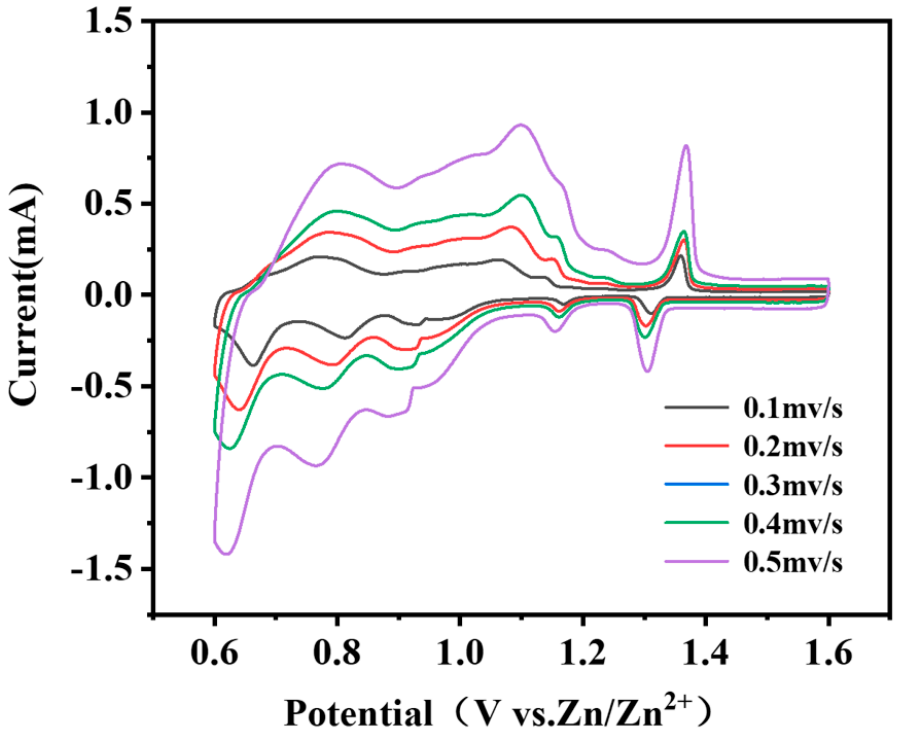


Figure S4. Cyclic voltammetry curves of Zn/ZA-based HGPE/CVO cell at different scan rates: 0.1-0.5 mV s^{-1}.

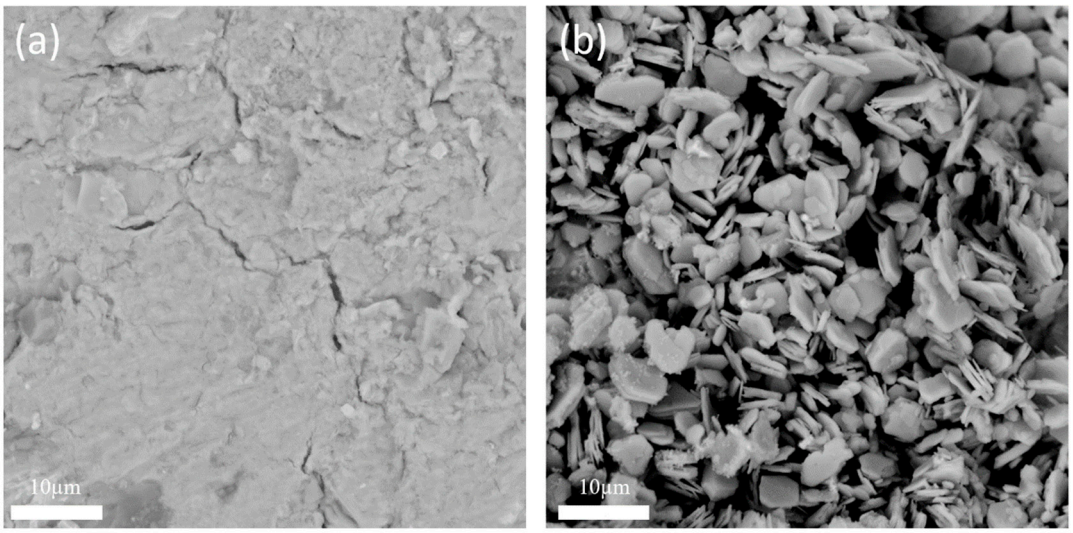


Figure S5. SEM micrographs of the Zn metal surfaces after 300 cycles at 3C in (a) Zn/ZA-based HGPE/CVO cell and (b) Zn/wet glass fiber separator/CVO cell.