

Highly Reversible Zn Metal Anode with V-Shaped Valley-Like Nanoarray Structure for Rechargeable Zn-Ion Aqueous Batteries

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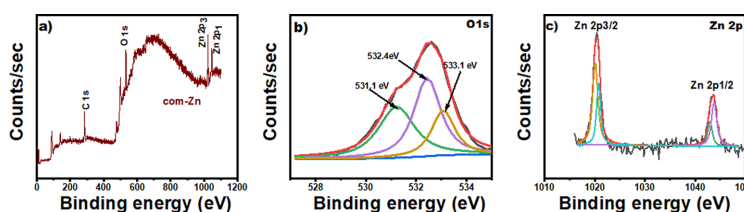


Fig. S1. XPS spectra of com-Zn (a) full spectrum, (b) O1s, and (c) Zn 2p.

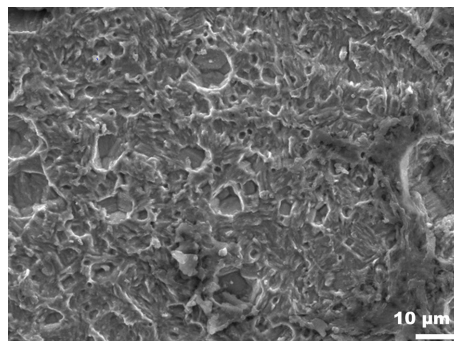


Fig. S2. FE-SEM image of E-Zn(WS), surface modified in 5% HCl without stirring.

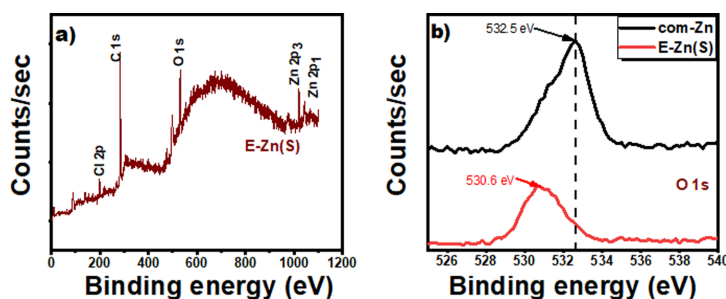


Fig. S3. (a) Full XPS spectrum of E-Zn(S) and (b) O1s spectrum of E-Zn(S) and com-Zn.

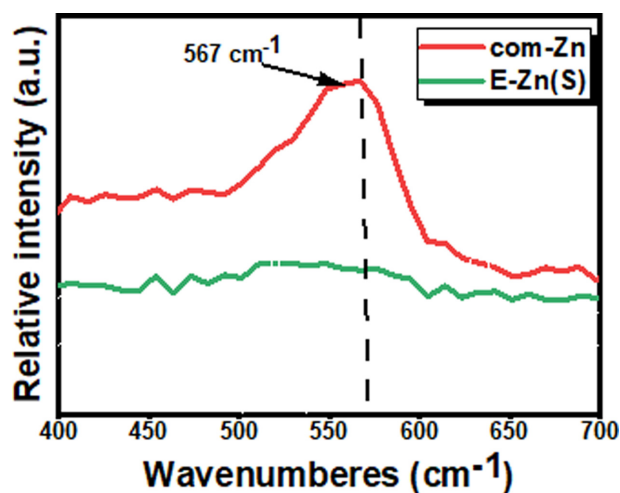
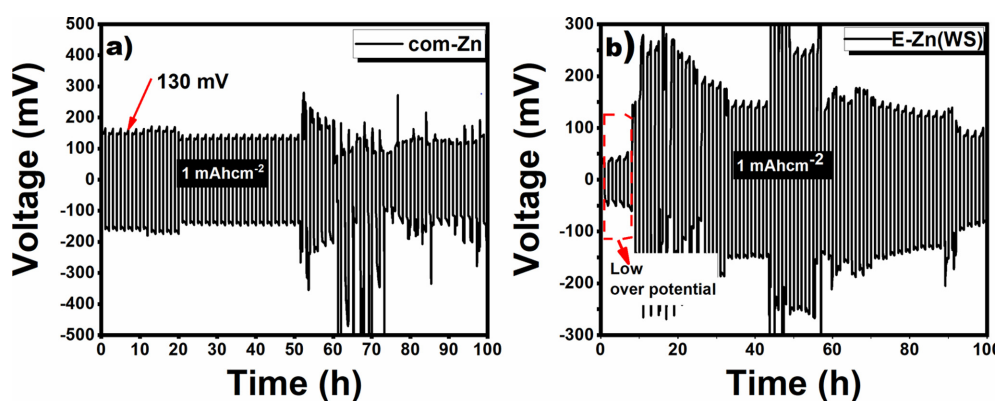
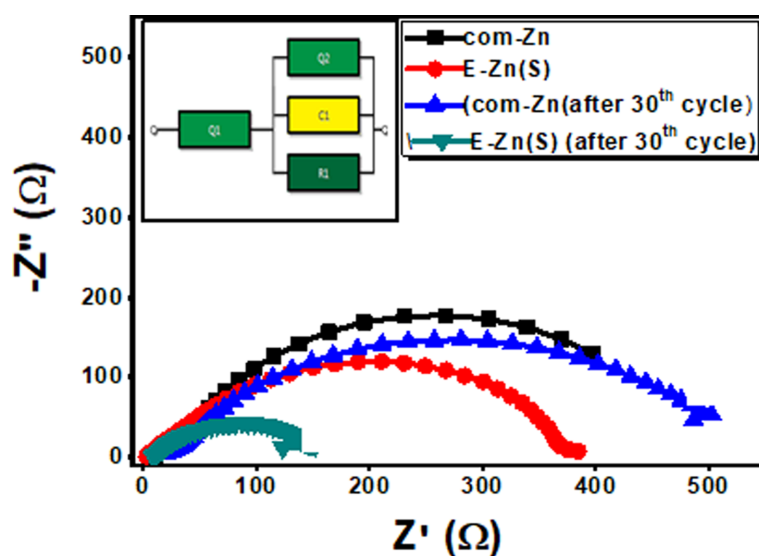


Fig. S4. Raman spectra of com-Zn and E-Zn(S) foil

Fig. S5. Stripping/plating performance of (a) com-Zn and (b) E-Zn(S) at current densities of 1 mA cm^{-2} .Fig. S6. EIS spectra of com-Zn and E-Zn(S) at initial cycle and after the 30th cycle.

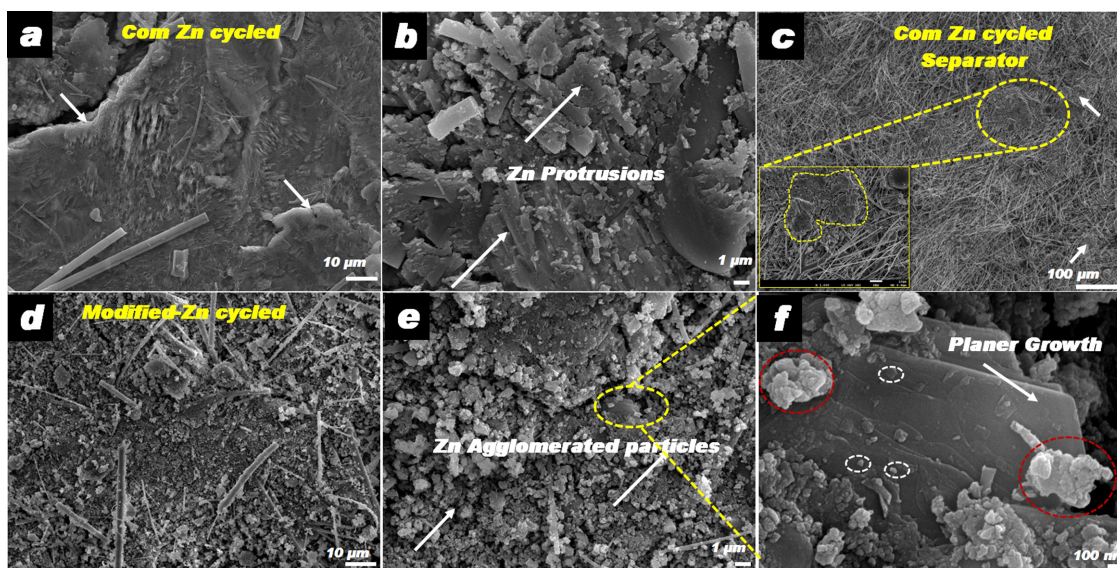


Fig. S7. Morphological characterization of the com Zn and E-Zn(S) anodes after cycling at a current density of 1 mA cm^{-2} with 1 mAh cm^{-2} . SEM images at different magnifications of (a, b) com Zn; (d–f) E-Zn(S). SEM image of separator after cycling at a current density of 1 mA cm^{-2} .

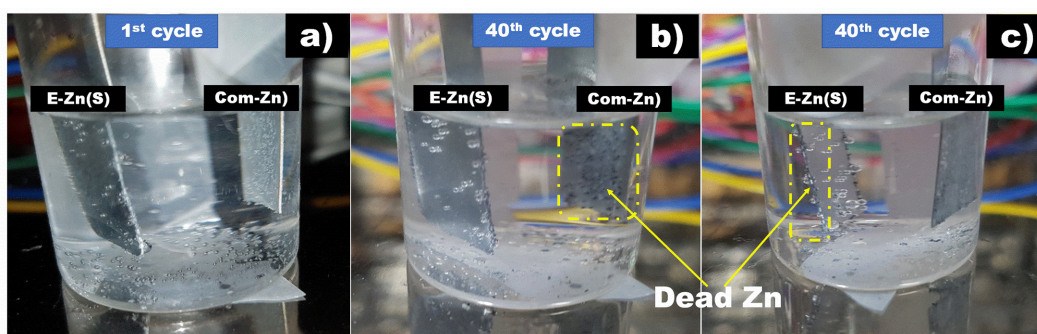


Fig. S8. An open electrolytic cell consisting of com-Zn//E-Zn(S) (a) before and (b) after cycling at a current of 1 mA cm^{-2} with a stripping/plating capacity of 1 mAh cm^{-2} .

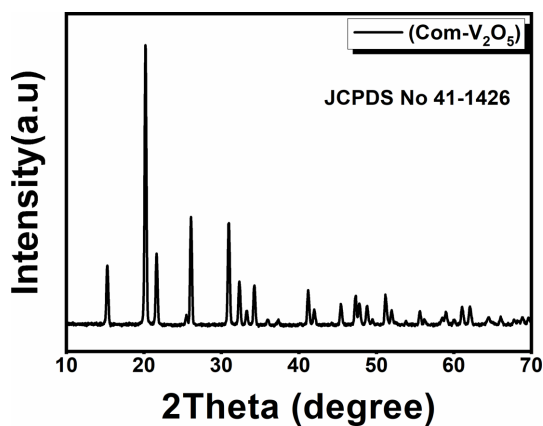


Fig. S9. XRD spectra of commercial V_2O_5 powder.

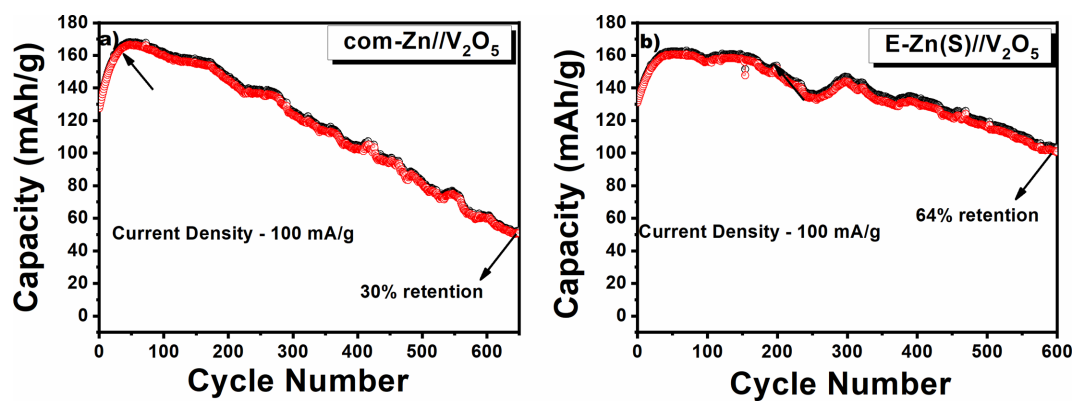


Fig. S10. Long-cycling performance of (a) com-Zn and (b) E-Zn(S) at a current density of 100 mA g⁻¹.

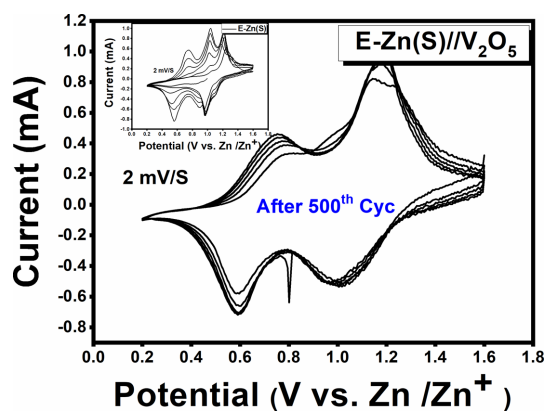


Fig. S11. CV profile of E-Zn(S) taken after the 500th cycle at a current density of 500 mA g⁻¹.