

Supporting Information for

Trace Amounts of Triple-Functional Additives Enable Reversible Aqueous Zinc-Ion Batteries from A Comprehensive Perspective

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Supplementary Figures

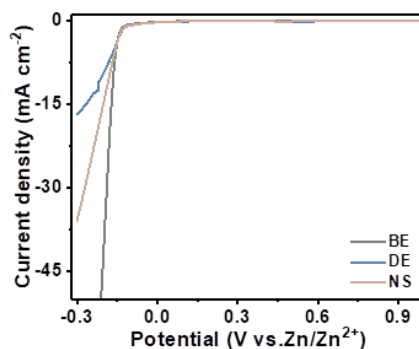


Fig. S1 LSV curves of Zn//Ti cells in different electrolytes

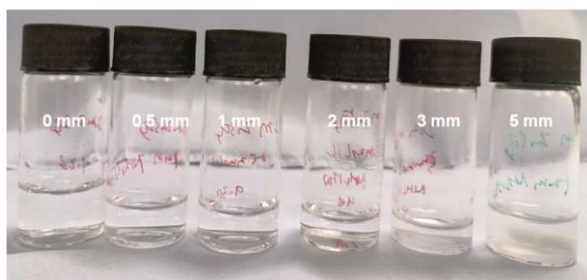


Fig. S2 Photograph of 2 M ZnSO₄ with different amounts of NH₃·H₂O

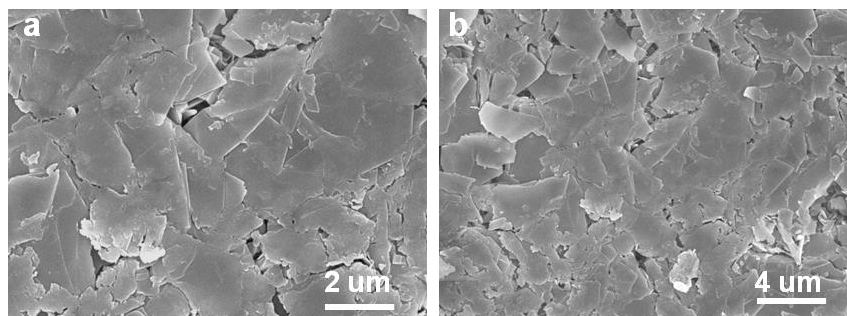


Fig. S3 SEM image of the Zn anode after immersing in DE for 8h at high and low magnifications, respectively

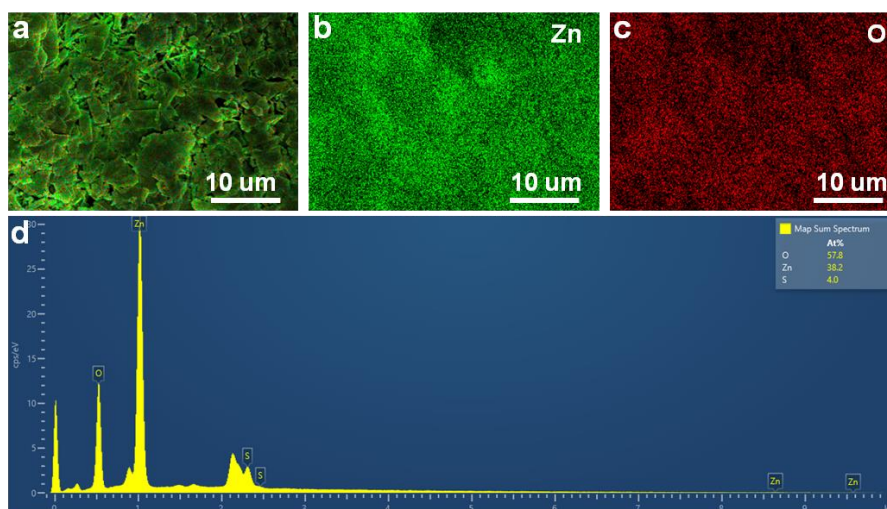


Fig. S4 (a) Overall EDX mapping of the Zn anode after immersing in DE for 8h. (b) Zn element distribution. (c) O element distribution. (d) Elements content spectrum

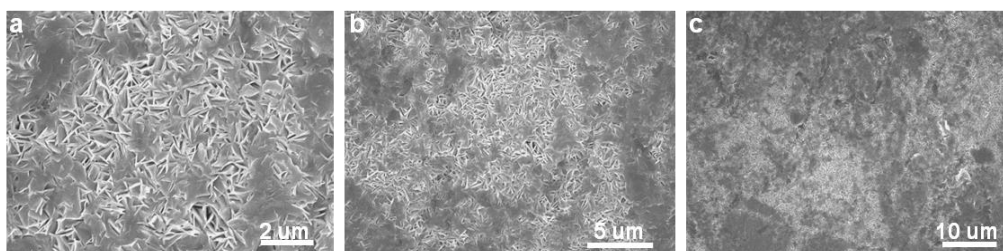


Fig. S5 (a-c) SEM image of the Zn anode after immersing in BE for 8h at high and low magnifications, respectively

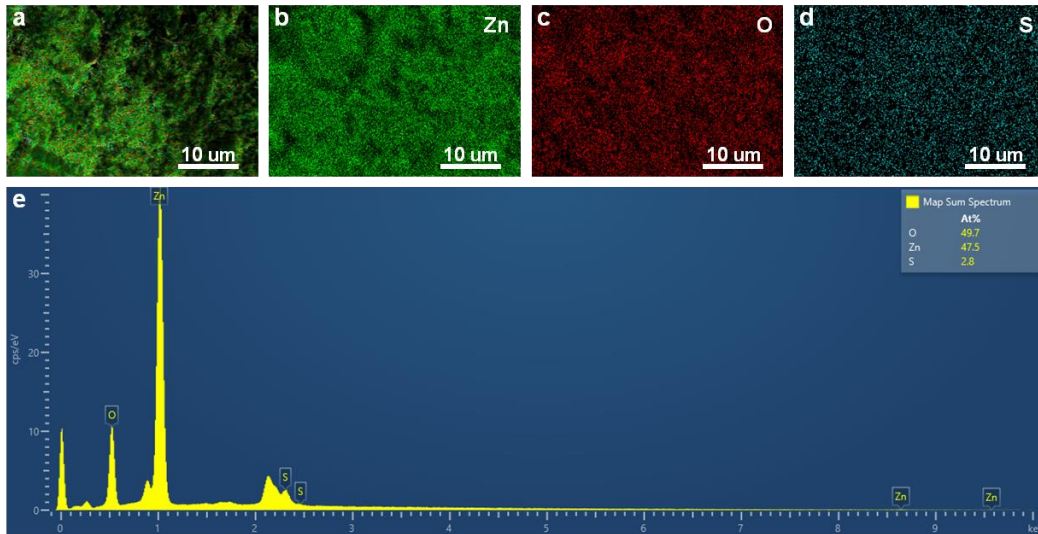


Fig. S6 EDX mapping of the Zn anode after immersed in BE for 8h. (a) Overall elements distribution. (b) Zn element distribution. (c) O element distribution. (d) S element distribution. (e) Elements content spectrum

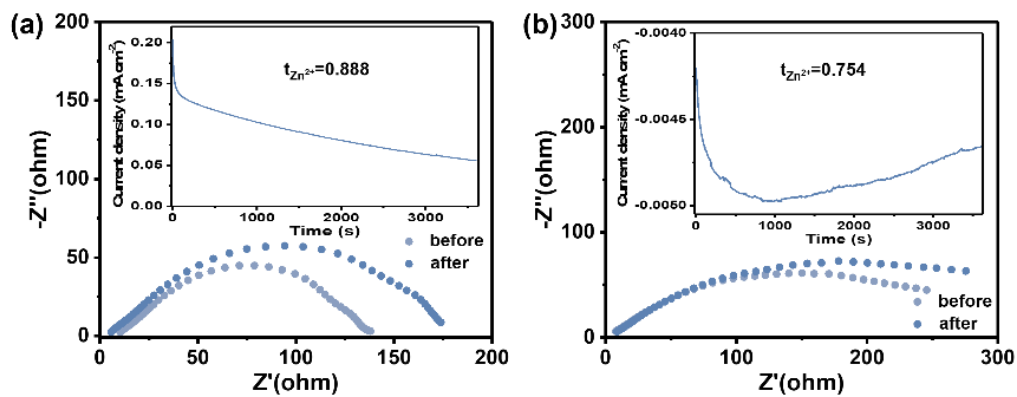


Fig. S7 EIS spectra of Zn//Zn symmetric cells before and after polarization. (a) DE. (b) BE

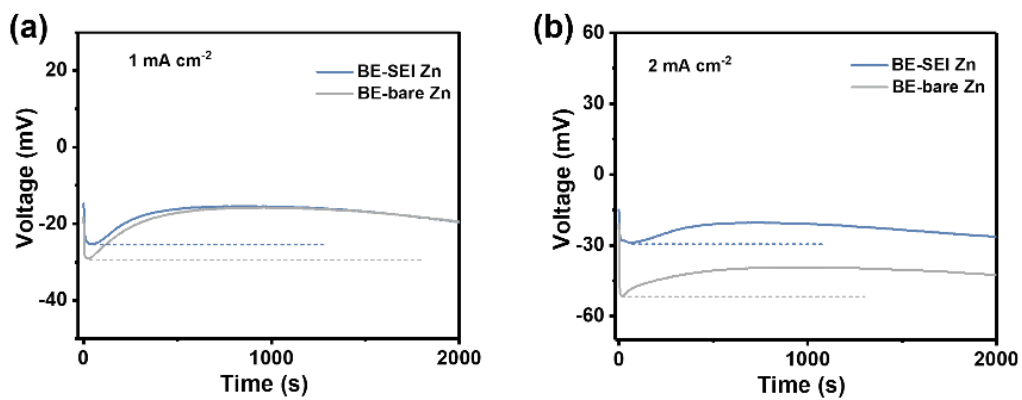


Fig. S8 Zn nucleation behavior on bare Zn and SEI Zn at different current densities. (a) 1 mA cm⁻². (b) 2 mA cm⁻²

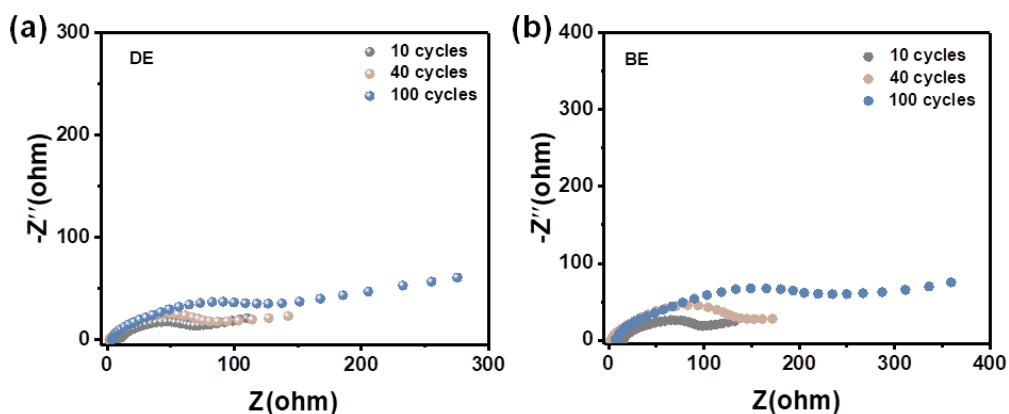


Fig. S9 (a) EIS curves of Zn//Zn symmetric cells in DE with different cycles. (b) EIS curves of Zn//Zn symmetric cells in BE with different cycles

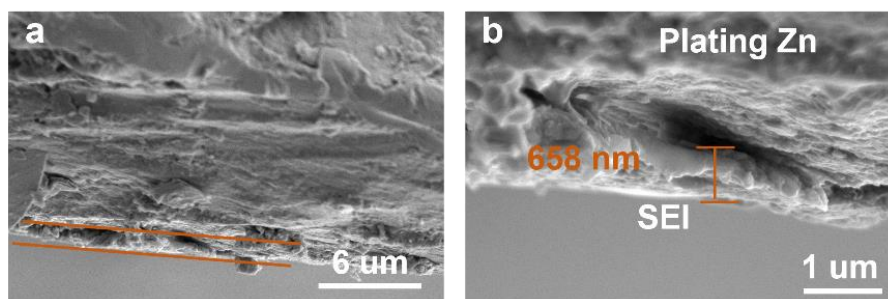


Fig. S10 (a-b) SEM images of the cross-section of Zn anodes after cycling in DE

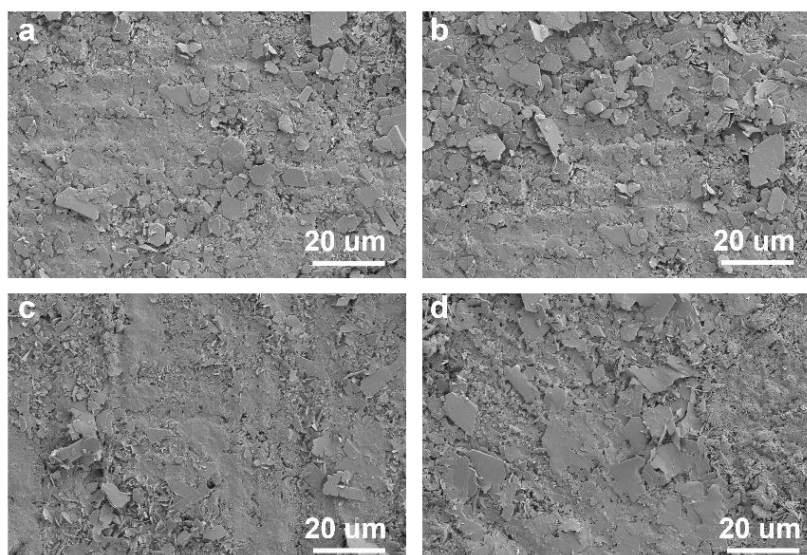


Fig. S11 SEM images of Zn anode surface after cycling in DE for (a) 30 cycles, (b) 50 cycles, (c) 80 cycles, and (d) 100 cycles

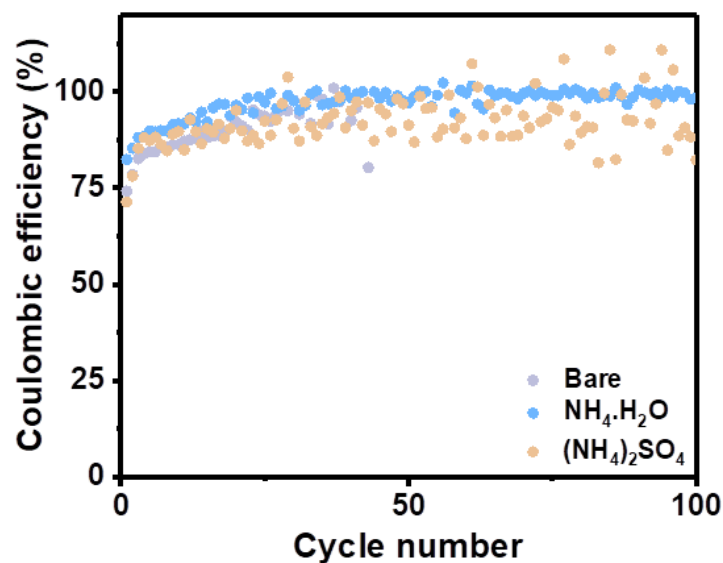


Fig. S12 Coulombic efficiency of Zn//Cu asymmetric cells in different electrolytes at 2 mA cm^{-2} - 1 mAh cm^{-2}

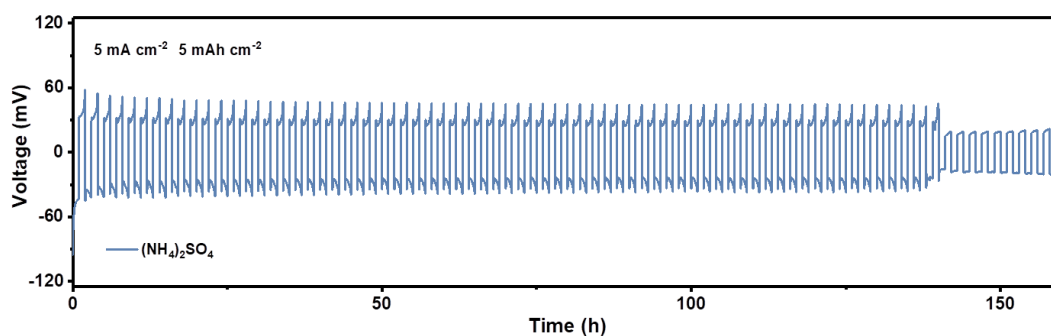


Fig. S13 Long-term cycling performances of Zn//Zn symmetric cell with (NH₄)₂SO₄ additive at 5 mA cm^{-2} - 5 mAh cm^{-2}

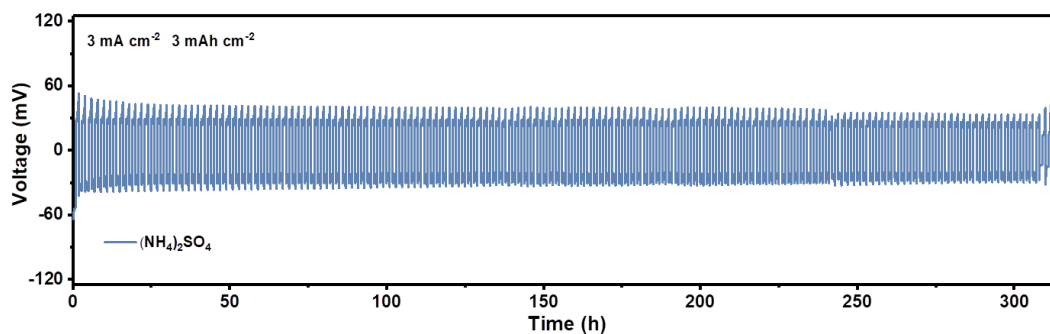


Fig. S14 Long-term cycling performances of Zn//Zn symmetric cell with (NH₄)₂SO₄ additive at 3 mA cm^{-2} - 3 mAh cm^{-2}

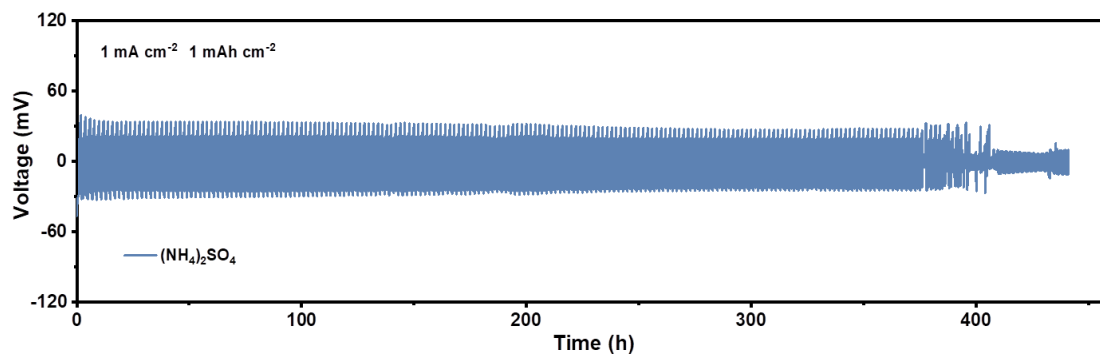


Fig. S15 Long-term cycling performances of Zn//Zn symmetric cell with (NH₄)₂SO₄ additive at 1 mA cm⁻²-1 mAh cm⁻²

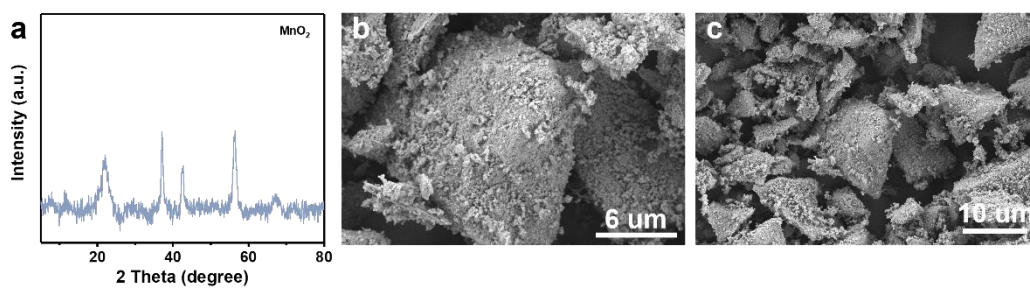


Fig. S16 (a) XRD patterns of commercial MnO₂. (b-c) SEM images of commercial MnO₂ at high and low magnifications, respectively