

Supplementary Materials

pH-decoupled tin redox chemistry enables high-voltage aqueous Sn-Br batteries

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Supplementary Figures

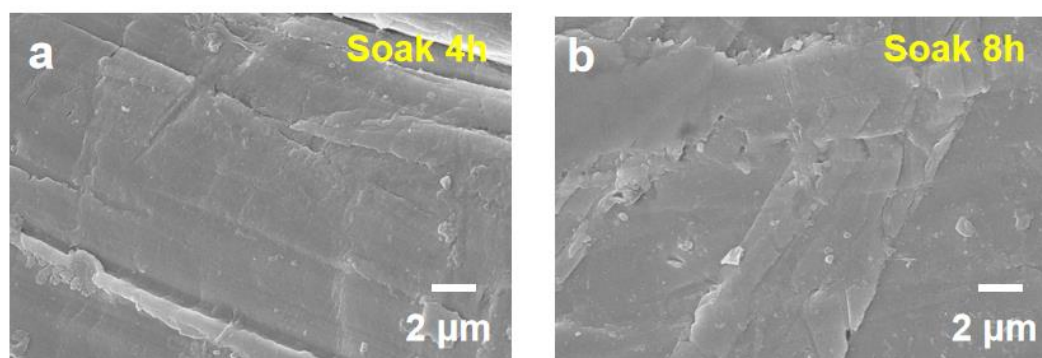


Figure S1 SEM images of tin sheets at different treatment times, (a) Soak 4 h and (b) Soak 8 h.

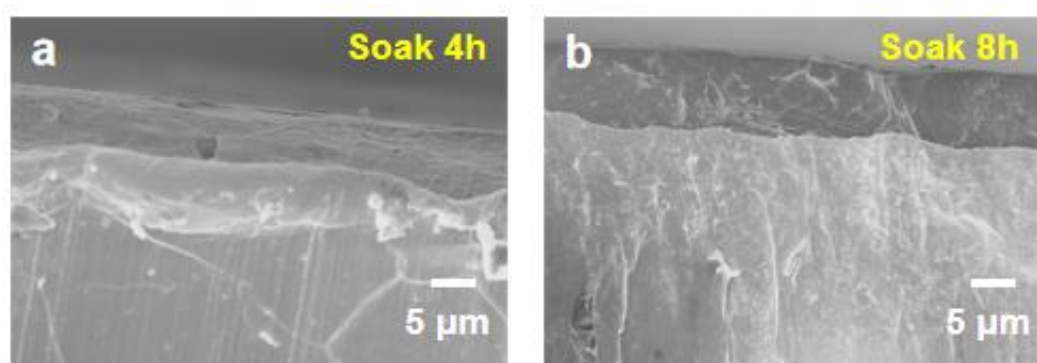


Figure S2 Cross-sectional SEM images of tin sheets at different treatment times, (a) Soak 4 h and (b) Soak 8 h.

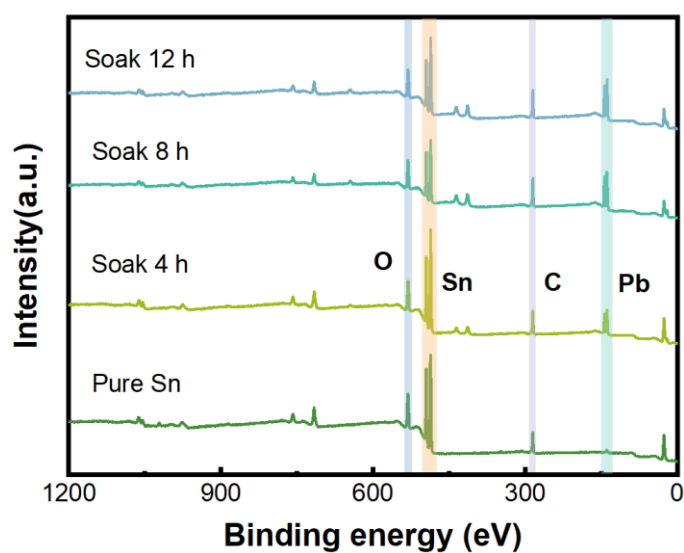


Figure S3 XPS gross spectra of Pb@Sn negative electrodes.

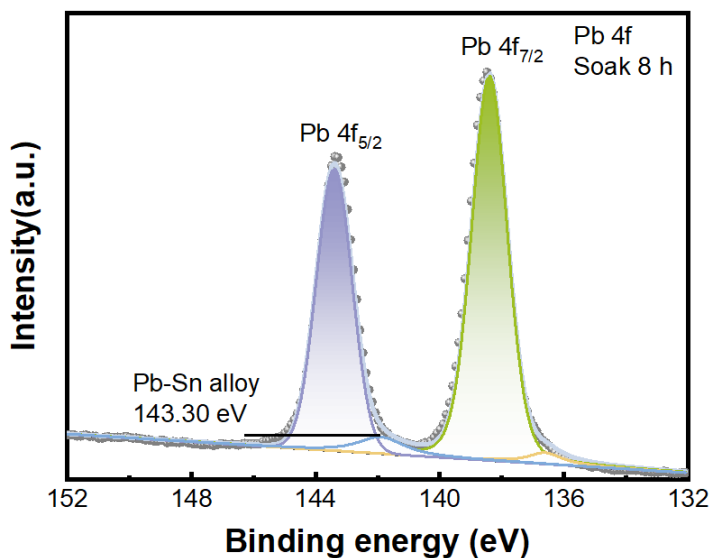


Figure S4 XPS fitting curves for elemental Pb for Soak 8 h sample.

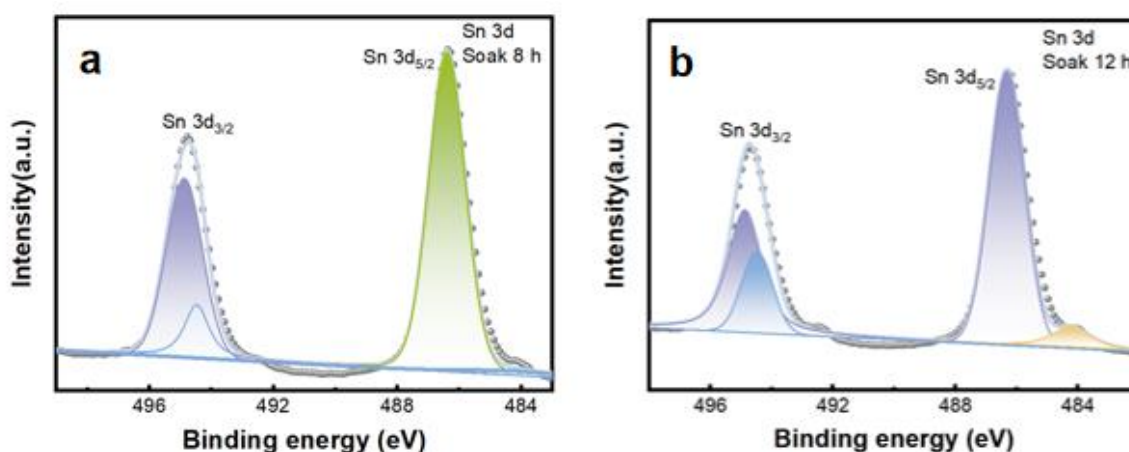


Figure S5 XPS fitting curves for elemental Sn for (a) Soak 8 h and (b) Soak 12 h samples.

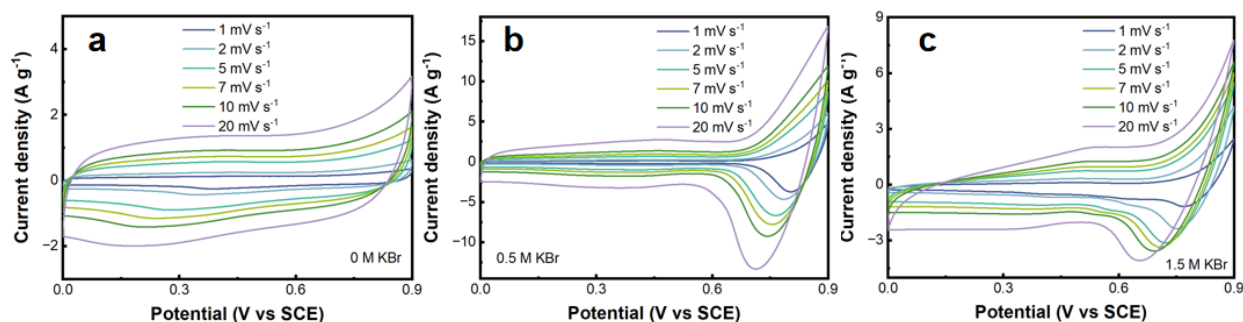


Figure S6 CV curves obtained at different scan rates for (a) 0 M, (b) 0.5 M and (c) 1.5 M KBr electrolyte in the three-electrode system.

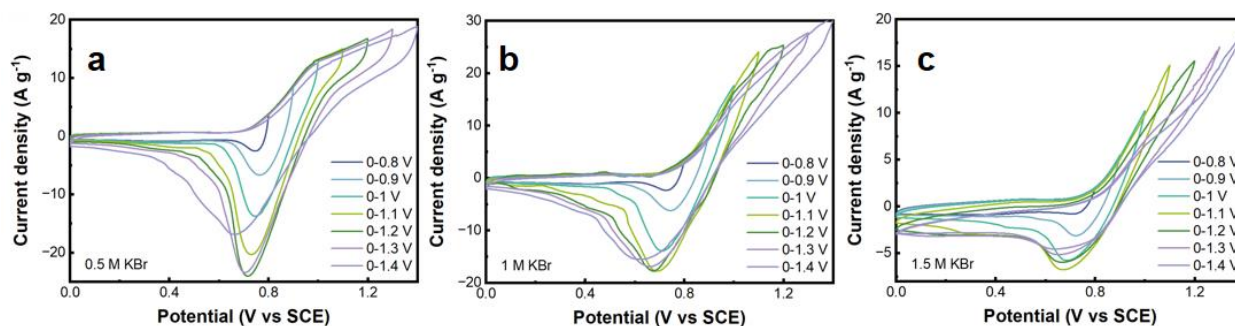


Figure S7 CV curves curves obtained at different voltage window for (a) 0.5 M, (b) 1 M and (c) 1.5 M KBr electrolyte in the three-electrode system.

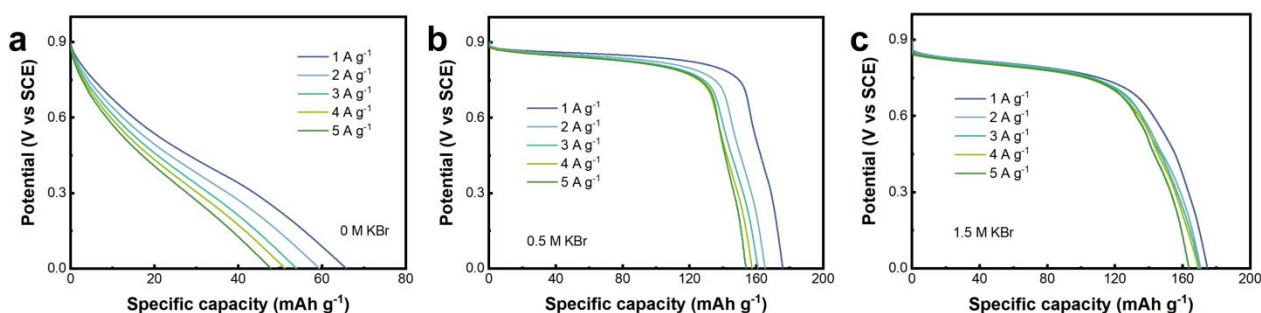


Figure S8 Discharge curves of (a) 0 M, (b) 0.5 M and (c) 1.5 M KBr electrolyte at different current densities for the three-electrode system.

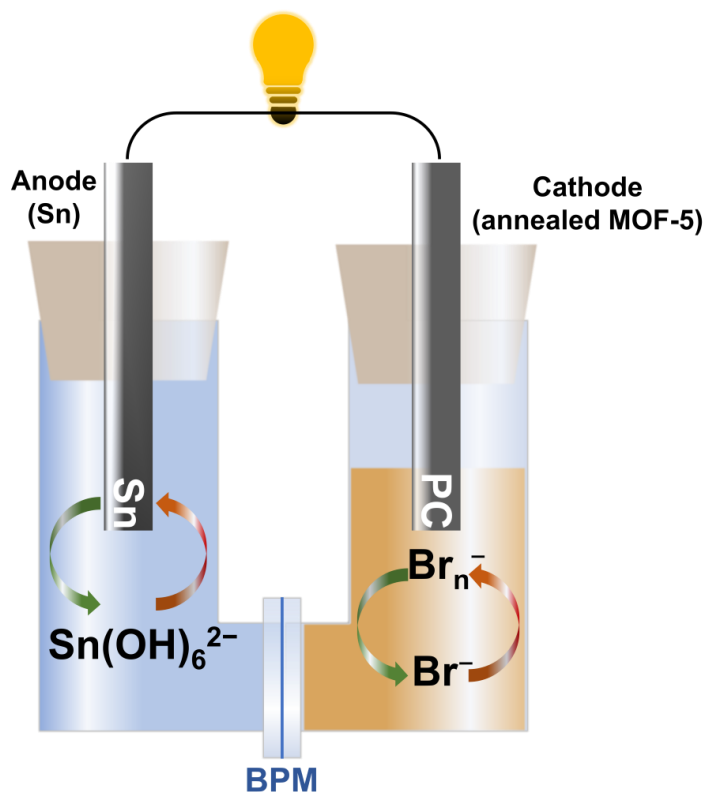


Figure S9 Schematic diagram of the Acid-Alkaline Dual-Electrolyte Battery (Adapted with permission from [1] Elsevier).

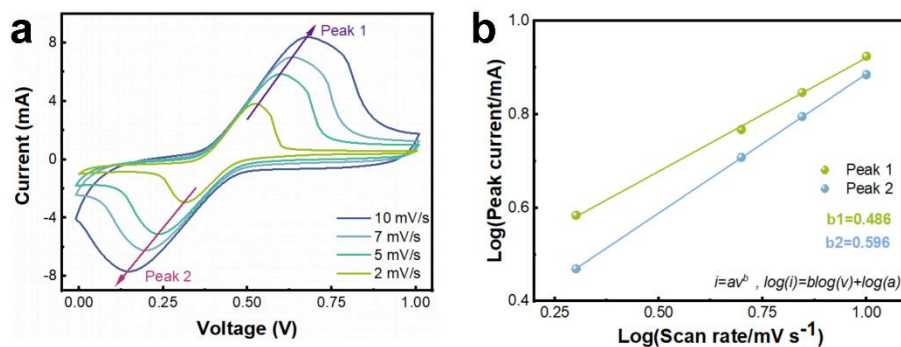


Figure S10 (a) CV curves of acid electrolyte full cell at different scan rates; (b) logarithmic plot between scan rate and peak current for acid electrolyte full cell.

REFERENCE

- (1) Li, L.; Yao, J.; Meng, J.; Liang, L.; Tan, S.; Liu, H.; Guo, C.; Bao, W.; Li, J.; Yao, D.; Zhang, G.; Yu, F. Make Past Serve Present: A Novel Aqueous Lead–Bromine Battery with High Energy Density. *Mater. Res. Bull.* **2025**, *184*, 113250.
<https://doi.org/10.1016/j.materresbull.2024.113250>.