

Supporting Information

Uniform lithium deposition induced by $ZnF_x(OH)_y$ for high performance sulfurized polyacrylonitrile-based lithium-sulfur batteries

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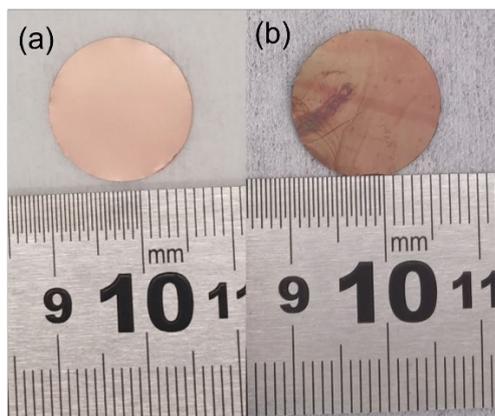


Figure S1 The Optical photographs of (a) bare Cu foil and (b) $\text{ZnF}_x(\text{OH})_y@\text{Cu}$.

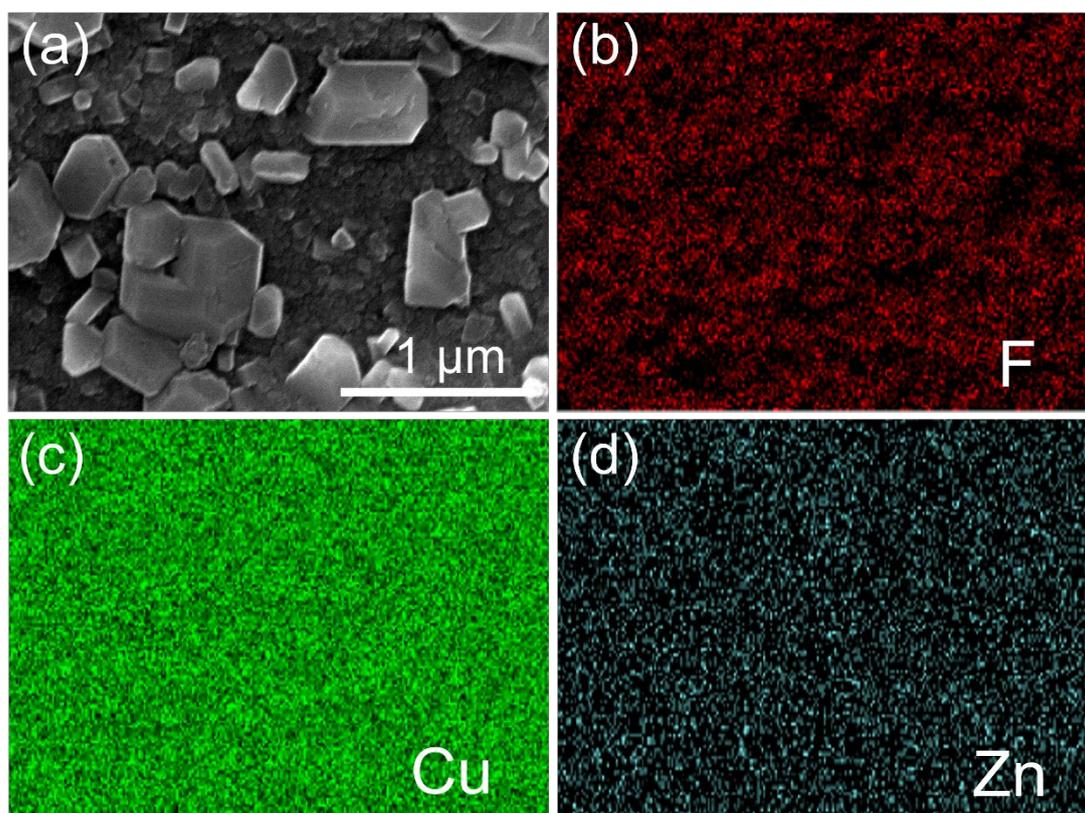


Figure S2 (a) SEM image of $\text{ZnF}_x(\text{OH})_y@\text{Cu}$. (b-d) EDS elemental mapping images of $\text{ZnF}_x(\text{OH})_y@\text{Cu}$ (fluorine, zinc, copper).

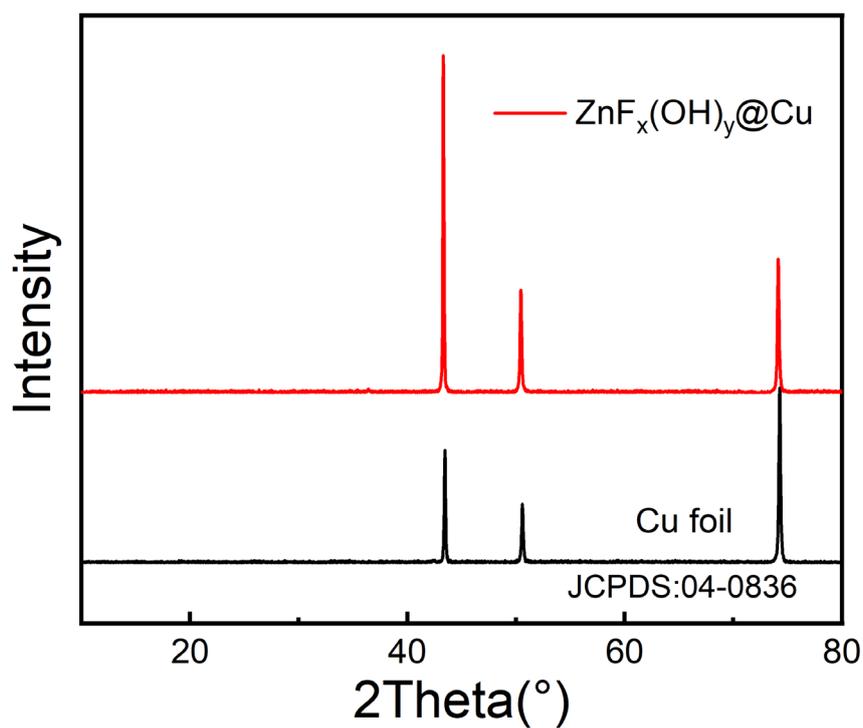


Figure S3 Comparison of XRD patterns of copper-based current collectors before and after the reaction.

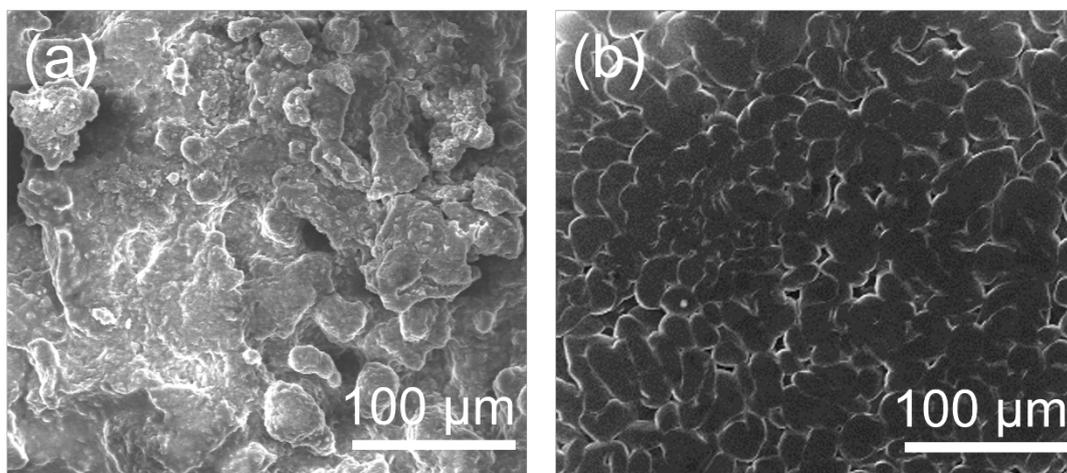


Figure S4 SEM image after lithium deposition. (a) Bare Cu (b) $\text{ZnF}_x(\text{OH})_y@\text{Cu}$ (current density: 0.5 mA cm^{-2} ; deposition capacity: 1.0 mAh cm^{-2})

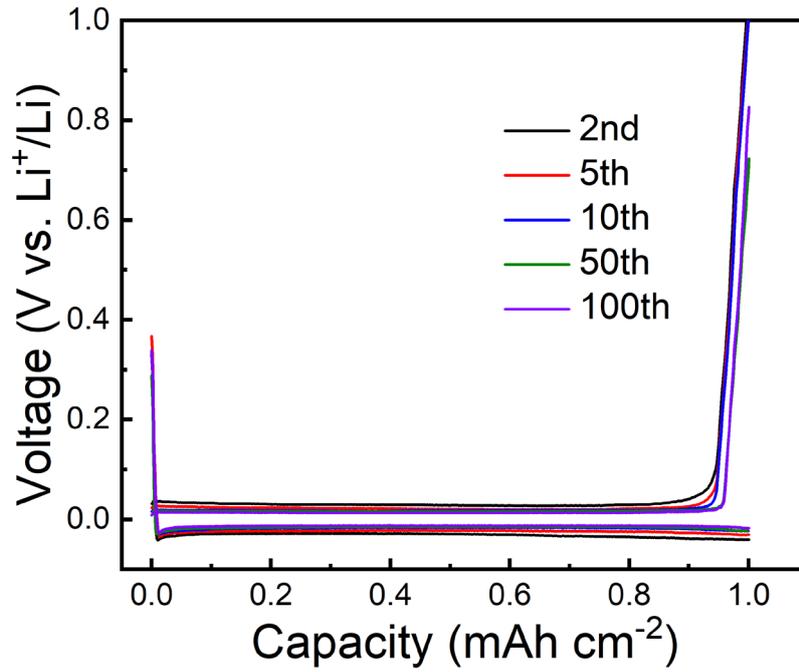


Figure S5 Electrochemical Li plating/stripping curves of the $\text{ZnF}_x(\text{OH})_y@\text{Cu}$ at 0.5 mA cm^{-2} with a specific capacity of 1 mAh cm^{-2} .

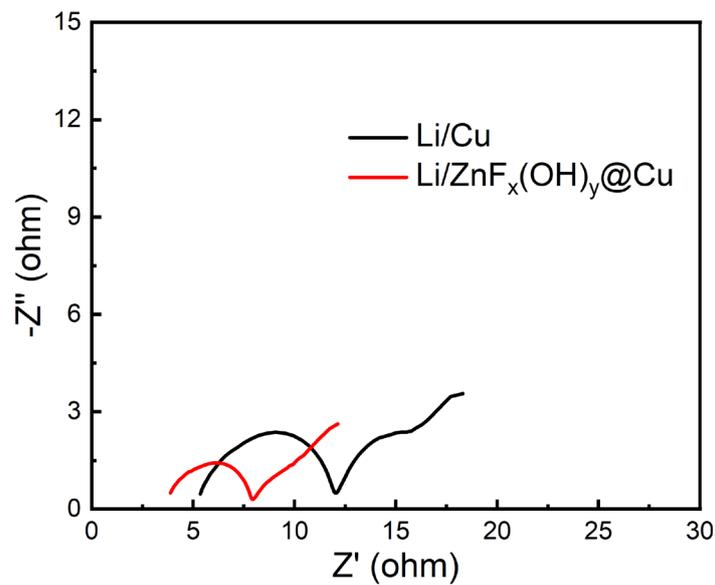


Figure S6 The EIS plots of the $\text{ZnF}_x(\text{OH})_y@\text{Cu}$ and bare Cu electrodes after the 5th cycles.

Bare Cu foil

$\text{ZnF}_x(\text{OH})_y@\text{Cu}$

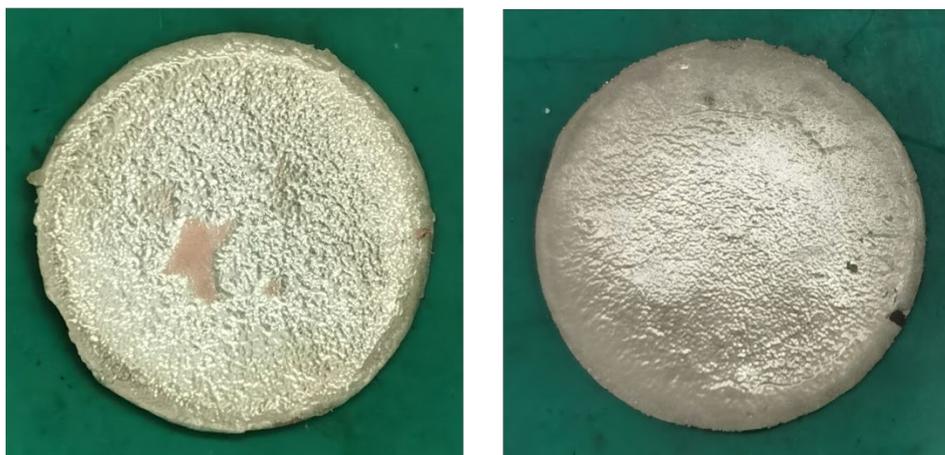


Figure S7. Photo images of the bare Cu foil and the $\text{ZnF}_x(\text{OH})_y@\text{Cu}$ foil after Li deposition at 6.0 mAh cm^{-2} .

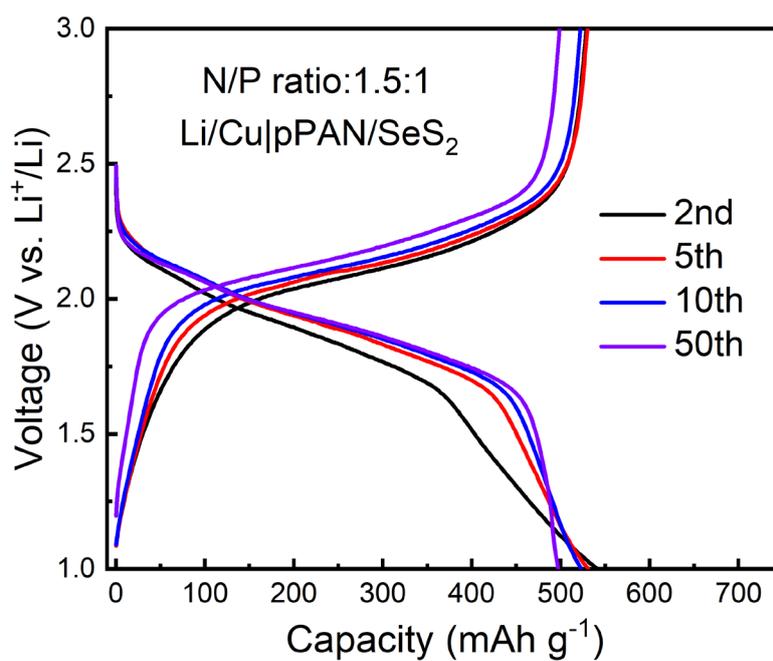


Figure S8. The discharge-charge curves of Li/Cu|pPAN/SeS₂ full-cell at 0.1 A g^{-1} .