Supplementary Information

A Freestanding Multifunctional Interlayer Based on Fe/Zn Single Atoms Implanted Carbon Nanofiber Membrane for High-Performance Li-S Batteries

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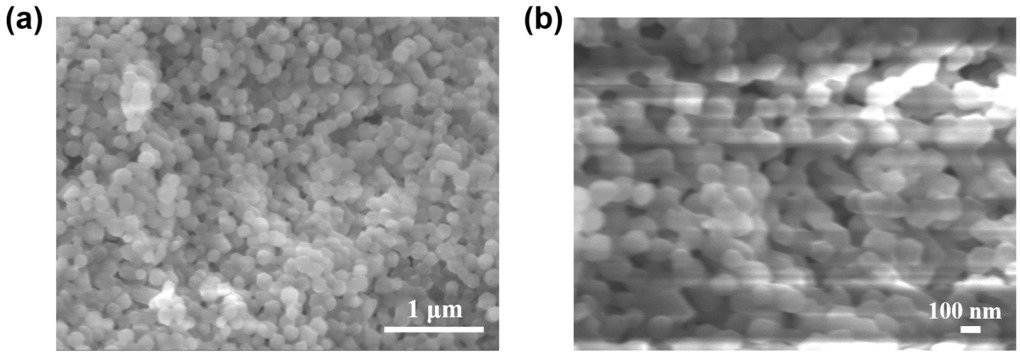

Figure S1. (a,b) SEM images of FeZn-ZIF.

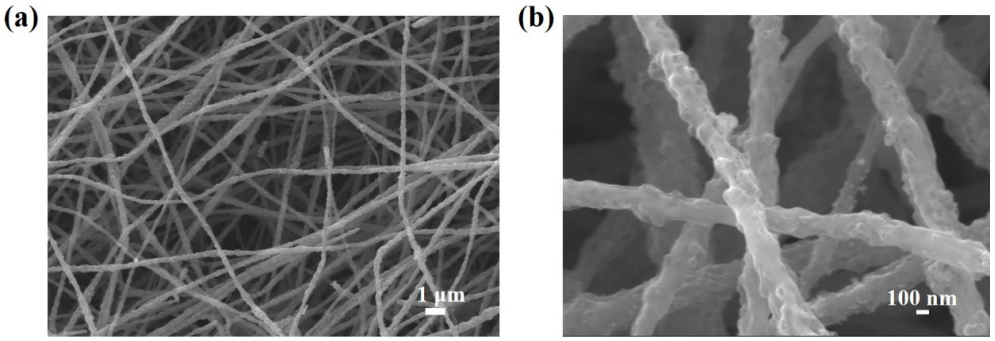

Figure S2. (a,b) SEM images of PAN/PVP/FeZn-ZIF nanofiber membrane.

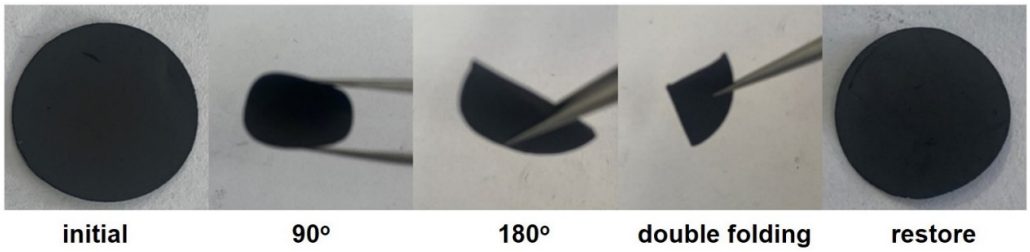

Figure S3. Optical photographs of FeZn-PCNF membrane at different fold angles.

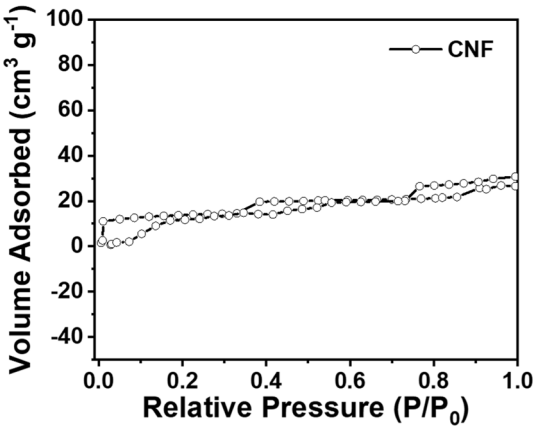

Figure S4. N_2 adsorption–desorption isotherms of CNF.

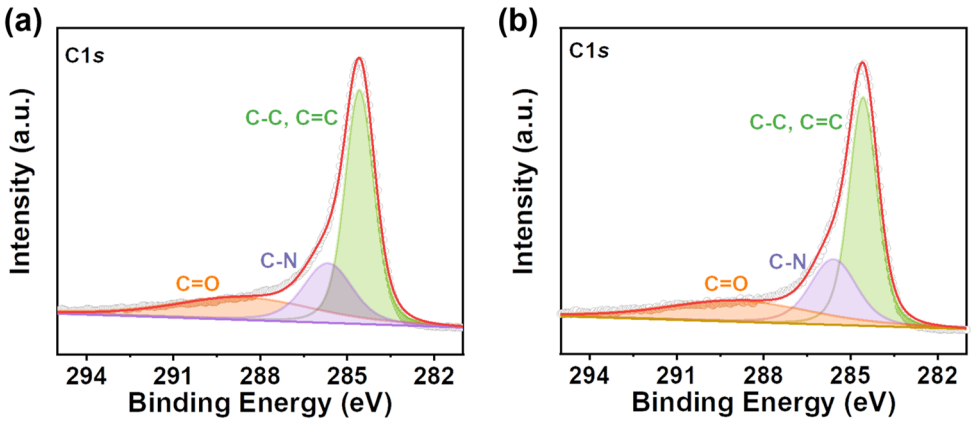

Figure S5. High-resolution XPS spectra of C 1*s* in (a) FeZn-PCNF and (b) PCNF.

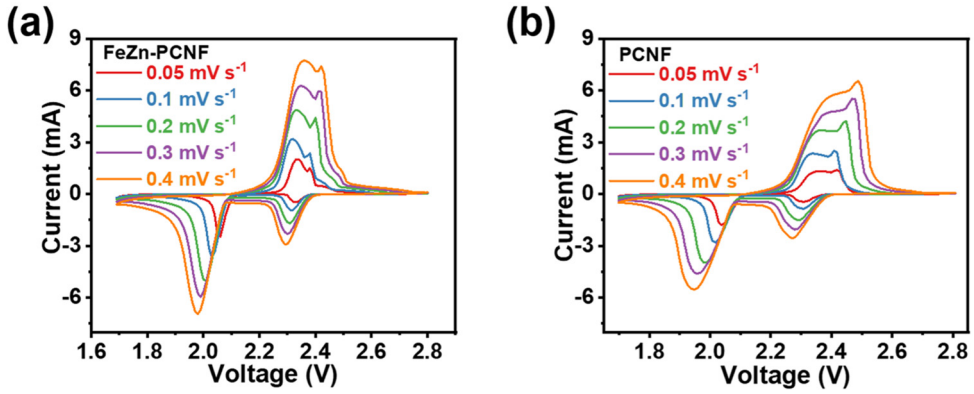

Figure S6. CV curves of the Li-S batteries with (a) FeZn-PCNF and (b) PCNF interlayers at different scan rates from 0.05 to 0.4 mV s^{-1}.

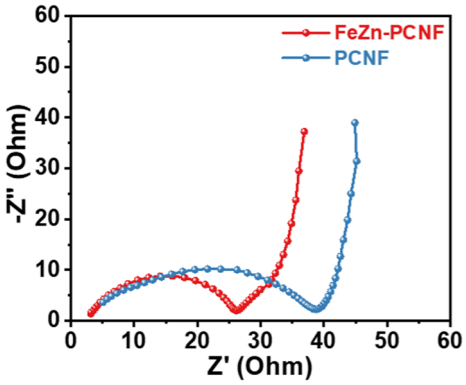

Figure S7. EIS spectra of the Li-S batteries with FeZn-PCNF and PCNF interlayers.

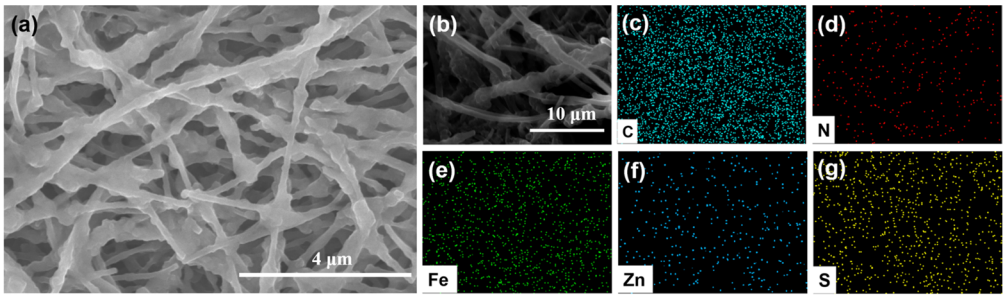

Figure S8. (a and b) SEM images of FeZn-PCNF interlayer and EDS elemental mappings of (c) C, (d) N, (e) Fe, (f) Zn and (g) S after cycles.

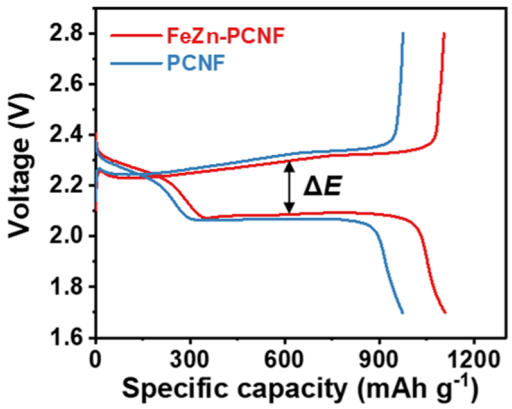

Figure S9. GCD curves of the Li-S batteries with FeZn-PCNF and PCNF interlayers.

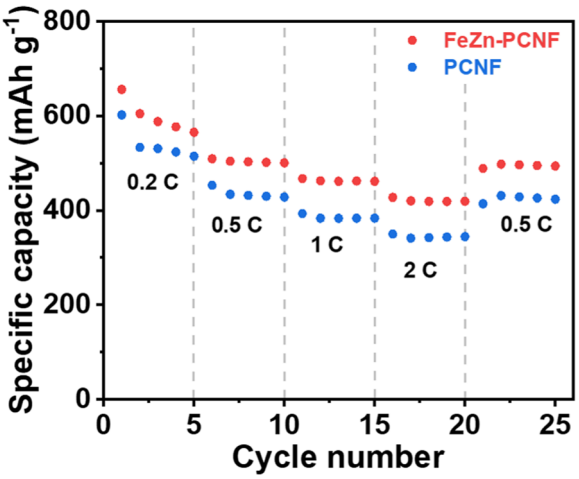

Figure S10. Discharge capacities of the Li-S batteries with FeZn-PCNF and PCNF interlayers based on the total mass of cathode and interlayer.

Table S1. Proportion of various N species in FeZn-CNF and PCNF.

Sample	Pyridinic N	Pyrrolic N	Graphitic N	Oxidized N
FeZn-PCNF	40.06%	20.31%	17.41%	22.22%
PCNF	32.61%	36.59%	18.40%	12.40%