

Supporting Information

Atomic-Layer-Deposition Functionalized Carbonized Mesoporous Wood Fiber for High Sulfur Loading Lithium Sulfur Batteries

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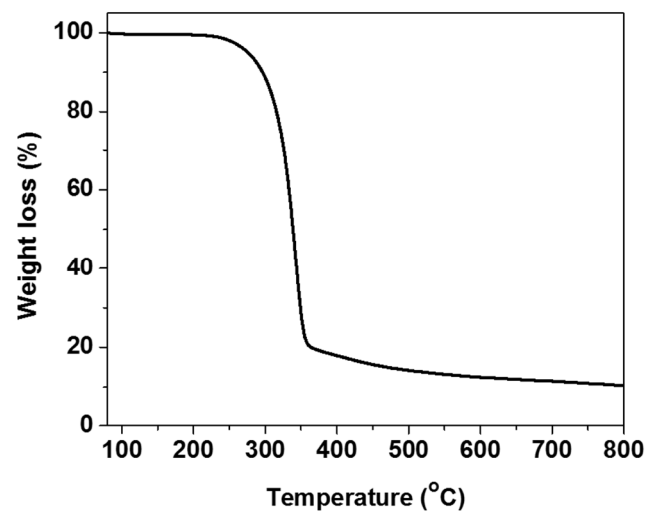


Figure S1. TG analysis for bleached pulp.

Porous structure in the carbon derived from the natural wood fiber

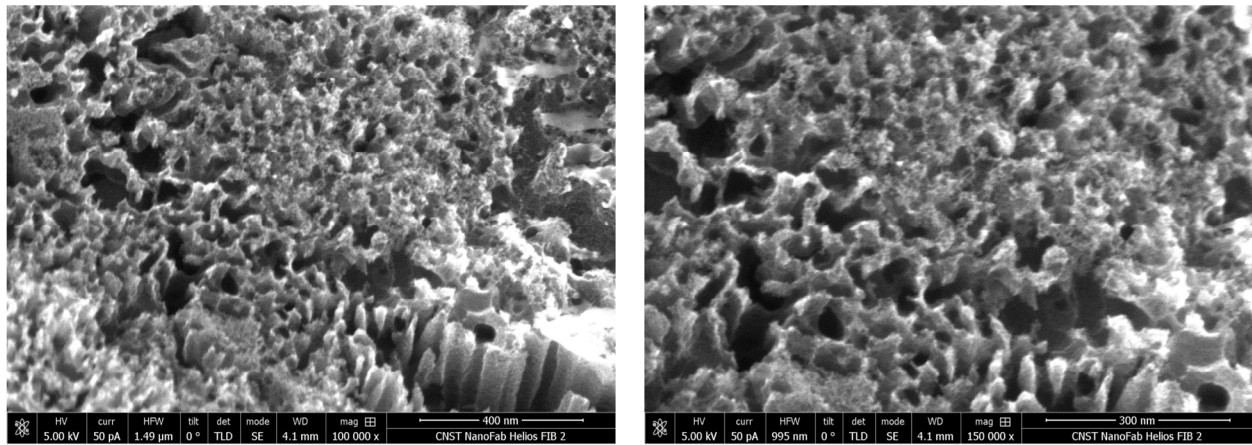


Figure S2. SEM images of CMWF.

Pore distribution curve of the CMWF and f-CMWF via the BET characterization

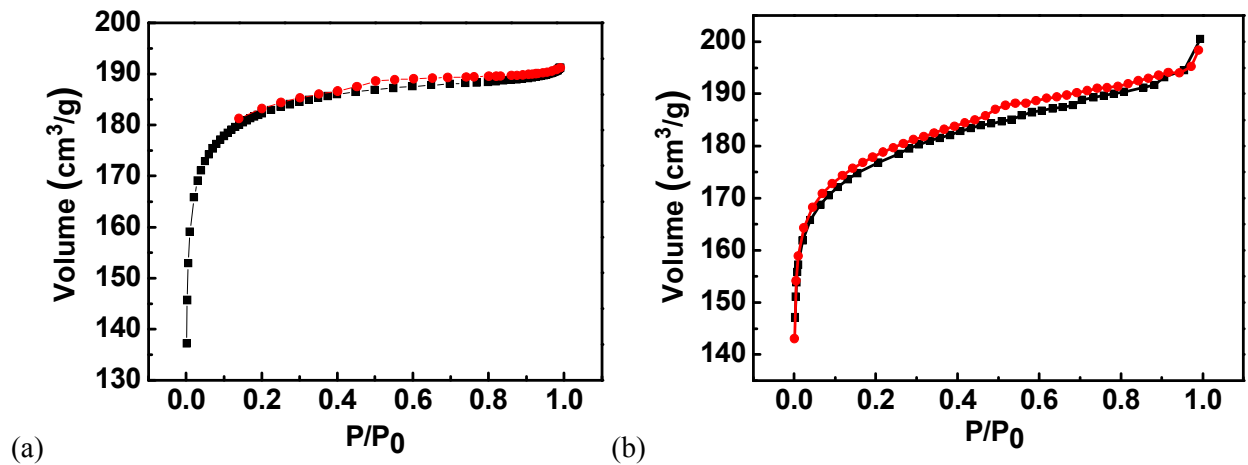


Figure S3. BET characterization for CMWF and f-CMWF. (a) Isotherm curve of CMWF. (b) Isotherm curve of f-CMWF.

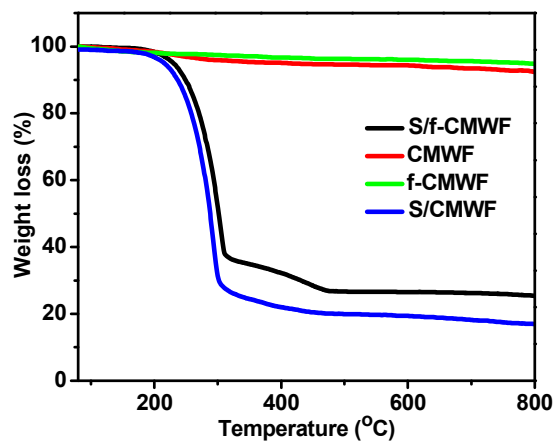


Figure S4 Thermogravimetric analysis for CMWF, f-CMWF, S/CMWF electrode and S/f-CMWF electrode.

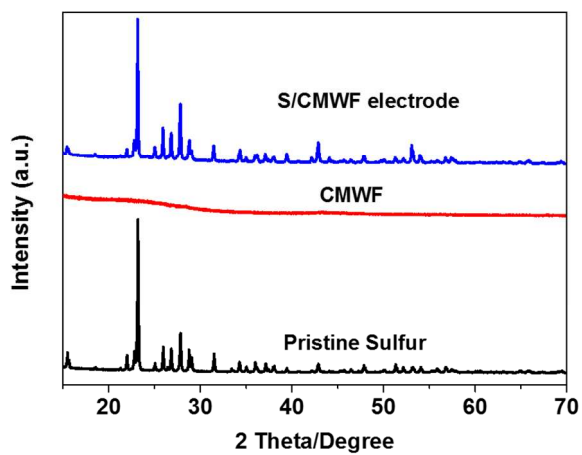


Figure S5. XRD patterns for CMWF and S/CMWF electrode.

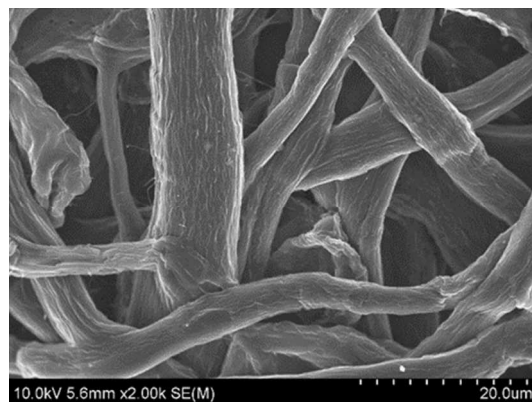


Figure S6. SEM image of S/f-CMWF electrode.

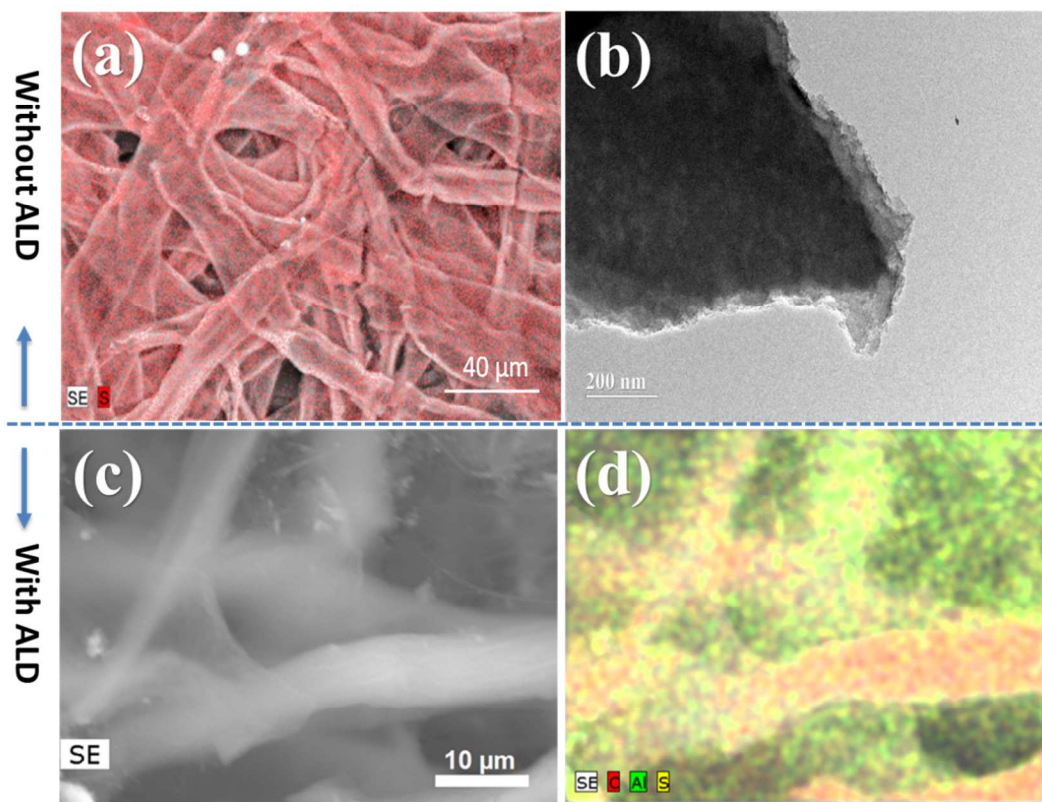


Figure S7. SEM energy dispersion spectrum (EDS) elementary mapping and TEM image to show the sulfur infiltrated electrode without (upper column) and with ALD treatment (bottom column). (a) EDS mapping to show a uniform sulfur distribution on the fiber surface. The red

color indicates the sulfur. (b) Low resolution TEM image of S/CMWF electrode. (c) SEM image of the S/f-CMWF electrode. (d) EDS mapping to show a uniform distribution of carbon, sulfur and aluminum in f-CMWF.

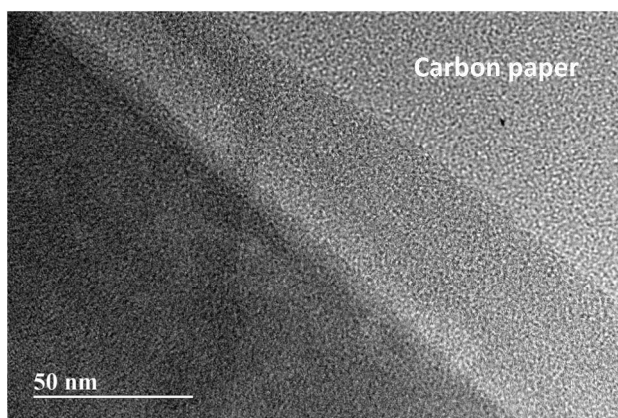


Figure S8. High resolution TEM image for CMWF.

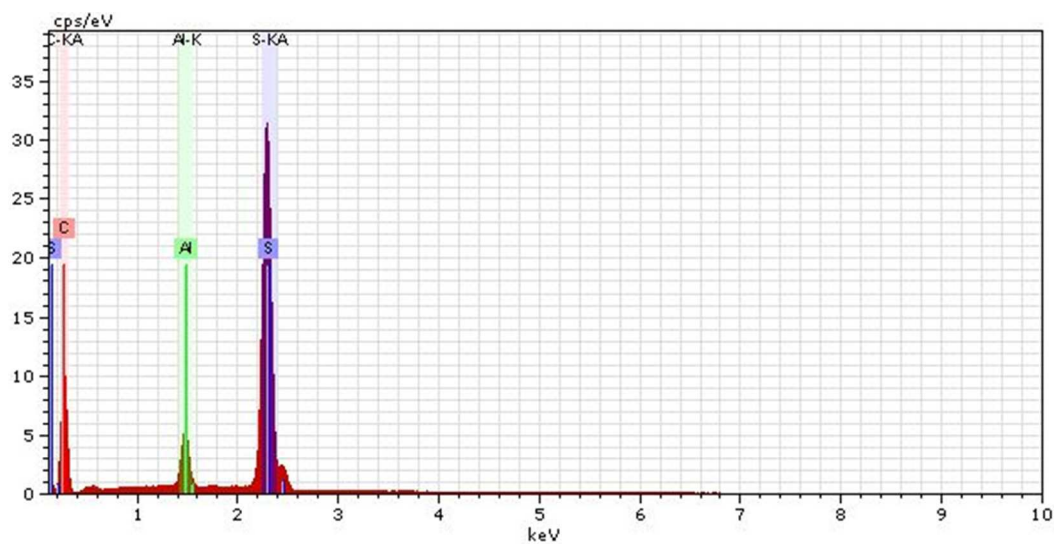


Figure S9. EDS mapping to show the existence of carbon, aluminum and sulfur in f-CMWF.

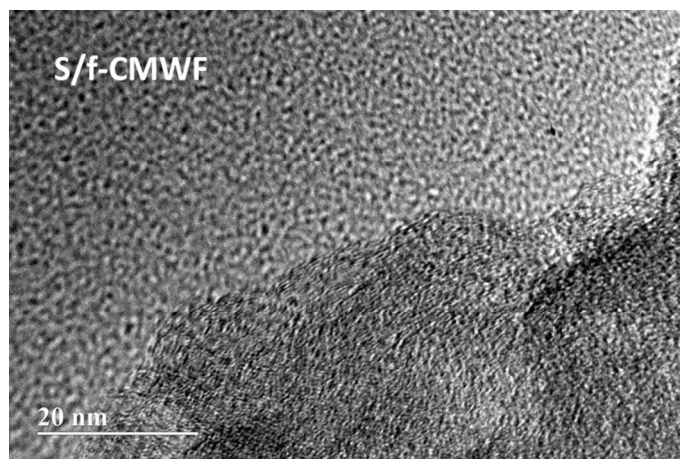


Figure S10. High resolution TEM image for S/f-CMWF electrode.