

Protective interlayer for trapping polysulfides and conducting host for sulfur: Dual role of candle soot carbon for the development of high performance Lithium-Sulfur battery

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Supporting information

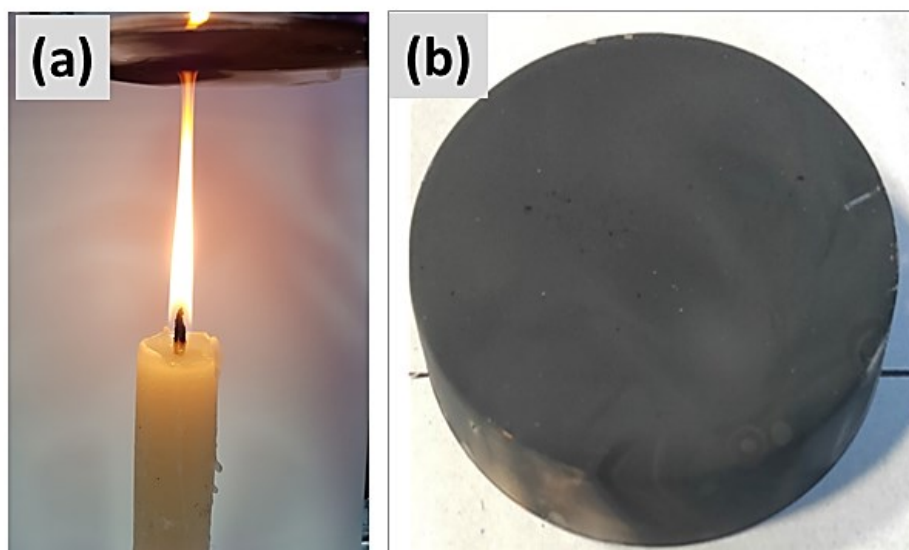


Fig. S1 (a) Collecting candle soot from the tip of the flame (b) collected candle soot.

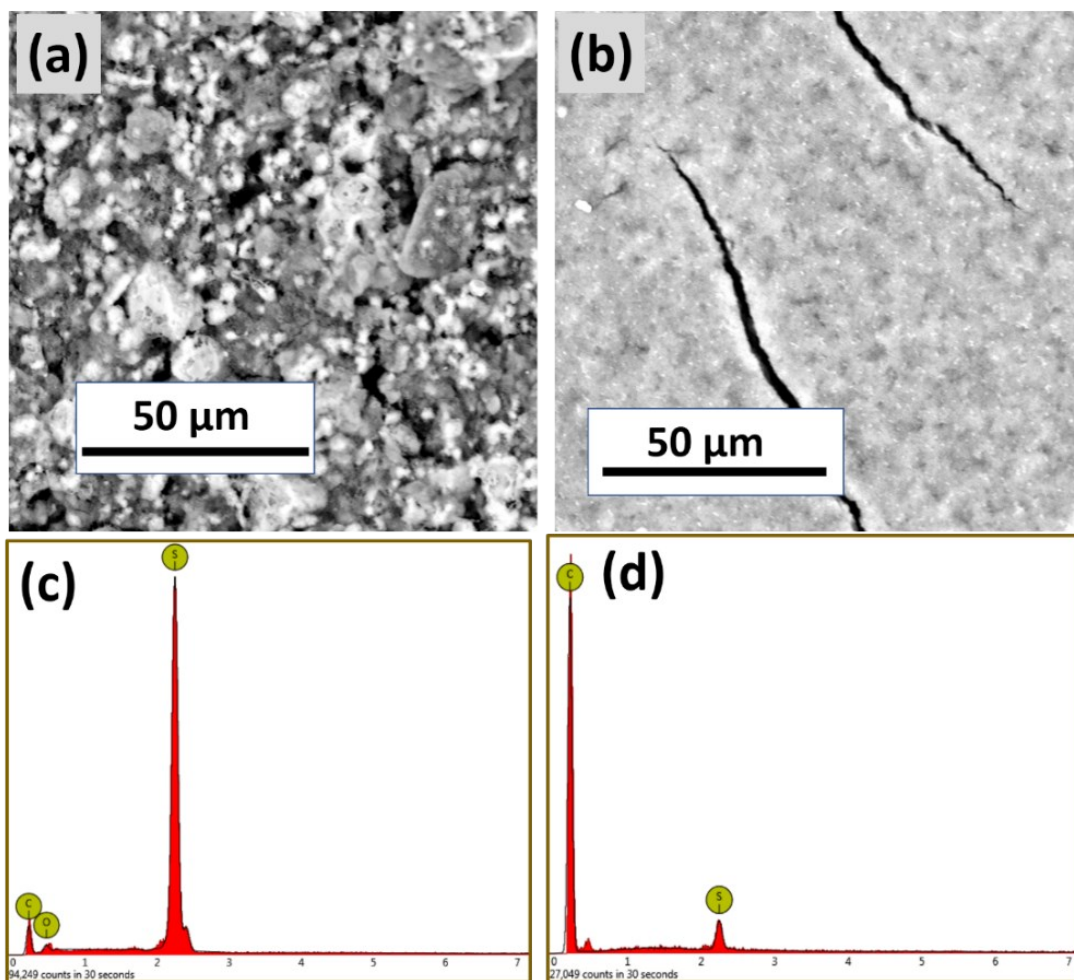


Fig. S2 SEM image of (a) SC (b) C-SC; EDAX analysis of (c) SC (d) C-SC.

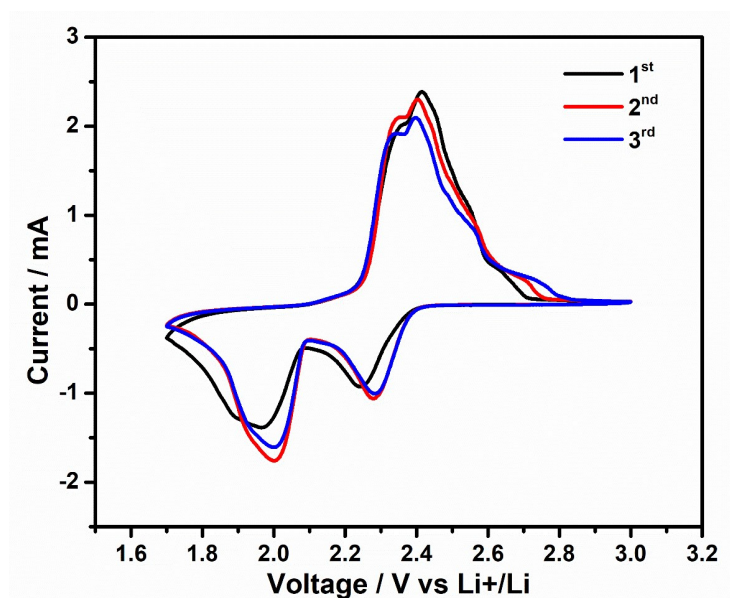


Fig. S3 CV of C-SC at the scan rate of 0.1 mV.s⁻¹.

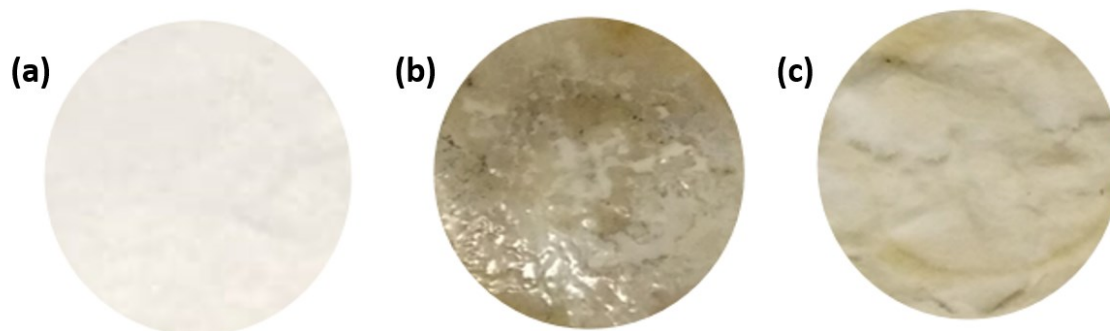
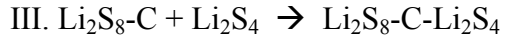
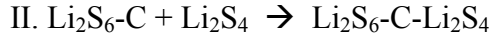
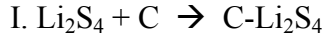


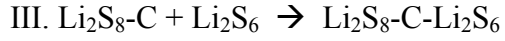
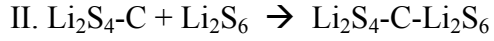
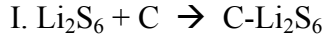
Fig. S4 Digital image of glass fiber separator (a) before cycling (b) after cycling [100 cycles] using SC as cathode; (c) after cycling [200 cycles] using C-SC as cathode.

Equation S1: Set of possible interaction between higher order polysulfides and carbon interlayer:

A. Possible interactions of Li_2S_4



B. Possible interactions of Li_2S_6



C. Possible interactions of Li_2S_8

