Electronic Supplementary Material (ESI) for Dalton Transactions.
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Supporting Information

Rational engineering yolk-shell In_2S_3@void@carbon hybrid as polysulfides-absorbable sulfur host for high-performance lithium-sulfur batteries

Yingyi Ding[a], Zihan Shen[b], Tianli Han[a], Jing Xu[a], Huigang Zhang[c,d], Chaoquan Hu[*,c,d] and Jinyun Liu[*,a]

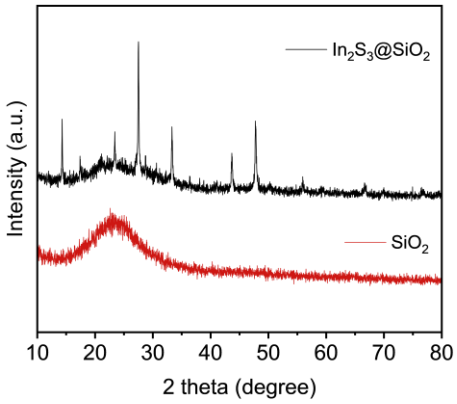

Figure S1. XRD patterns of SiO_2 and In_2S_3@SiO_2.

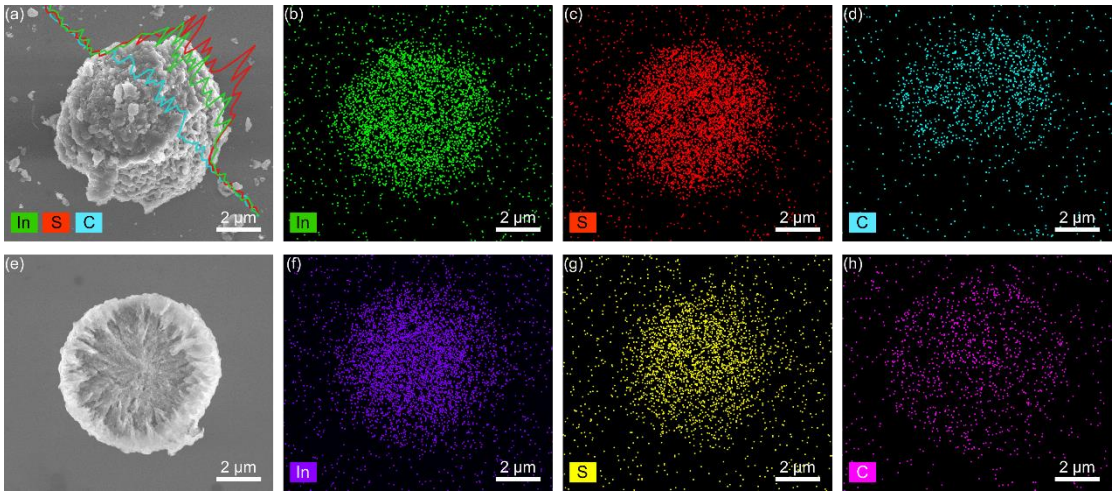

Figure S2. (a) Line-scanning curves and (b-d) elemental mapping images of the In_2S_3@S@C hybrids. (e-h) Cross-ssectional view and elemental mapping images.

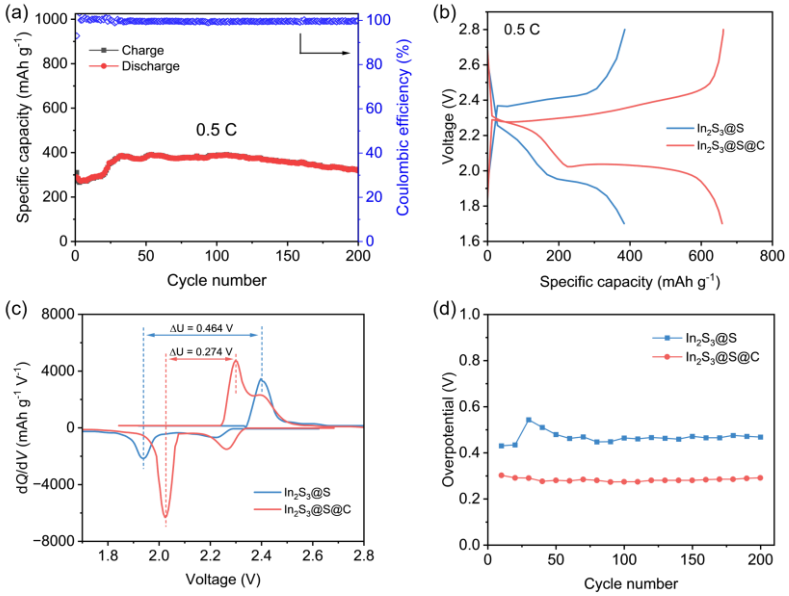

Figure S3. (a) Capacities and Coulombic efficiency of the In_2S_3@S at 0.5 C. (b) Charge-discharge curves of the In_2S_3@S and In_2S_3@S@C at 0.5 C. (c) Corresponding *dQ/dV* plots. (d) Overpotential of In_2S_3@S and In_2S_3@S@C at 0.5 C.

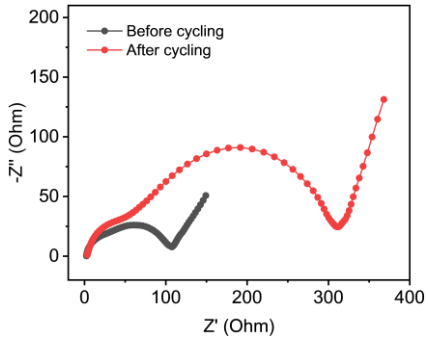

Figure S4. EIS spectra of In_2S_3@S@C before and after cycling 500 times at 0.5 C.

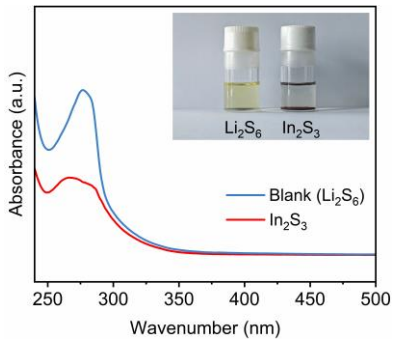

Figure S5. The absorbance profiles of the Li_2S_6 solutions before and after adding In_2S_3 as the absorbent. The inset shows the picture after absorption. For adsorption tests, 60 μL of 0.2 mol L^{-1} of Li_2S_6 solution was mixed with 3 mL of tetrahydrofuran and 20 mg of samples in a glass vial, keeping for 18 h.