

MoS₂ Nanosheets Grown on Hollow Carbon Spheres as Strong Polysulfide Anchor for High Performance Lithium Sulfur Batteries

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Supplementary Materials

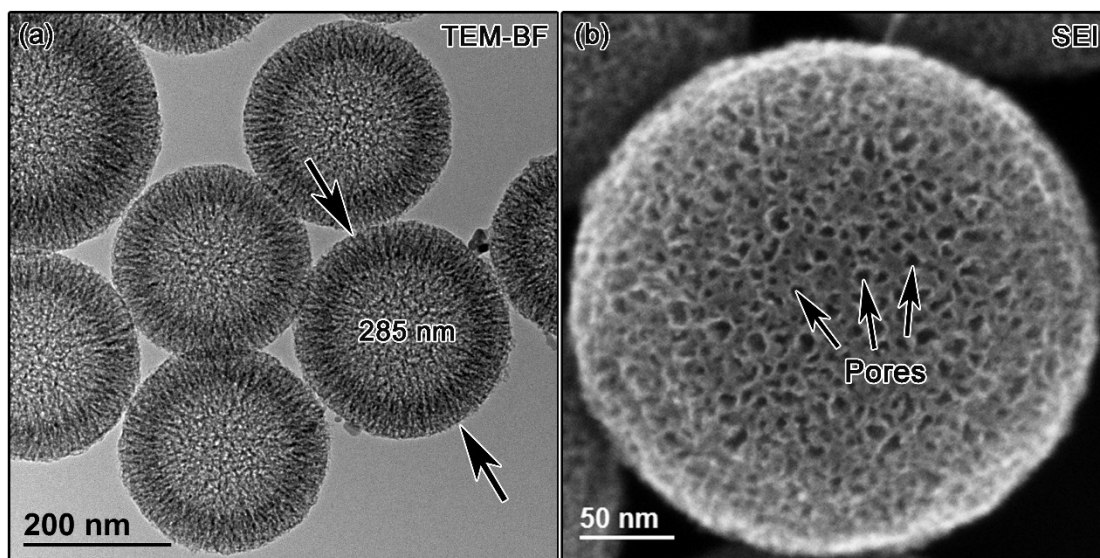


Figure S1 TEM BF (a) image and SEI (b) of HCS illustrates the detailed morphology and pore structure.

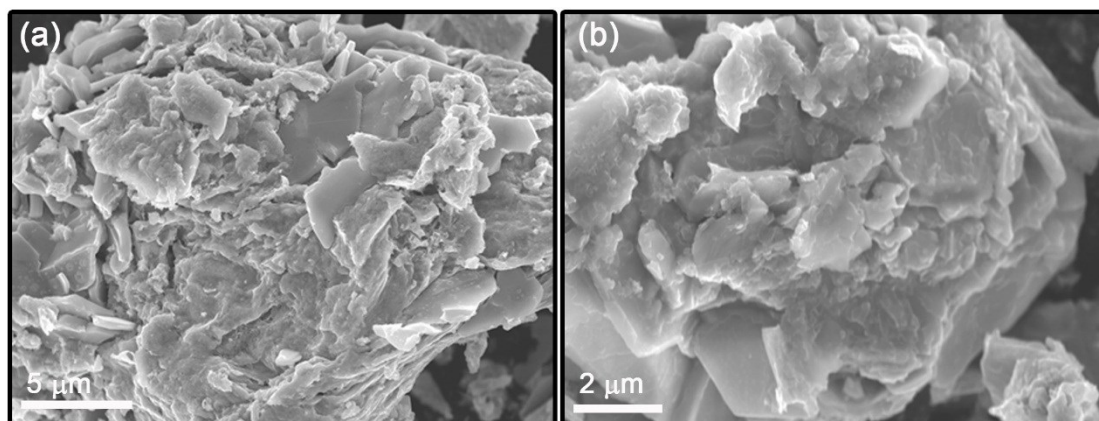


Figure S2 SEM images of pure MoS₂ nanosheets.

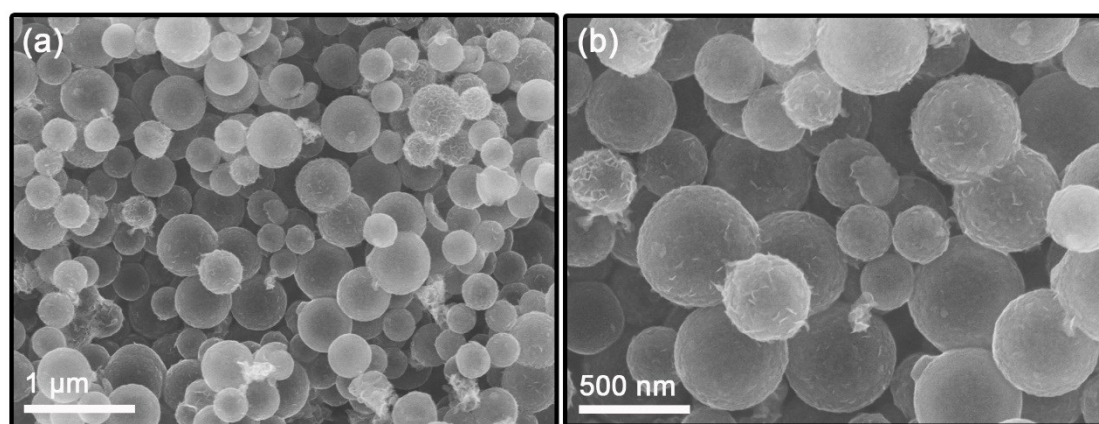


Figure S3 SEM images of MoS₂@HCS nanocomposites with smaller pore size of HCS.

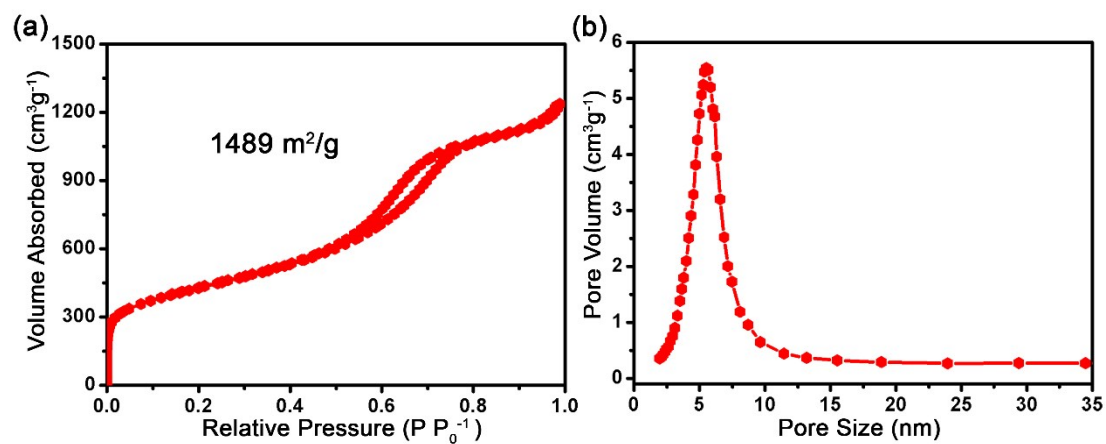


Figure S4 The N₂ isothermal adsorption (a) and pore size distribution curve (b) of HCS show the 1489 m²/g BET specific surface area and 5.6 nm average pore size.

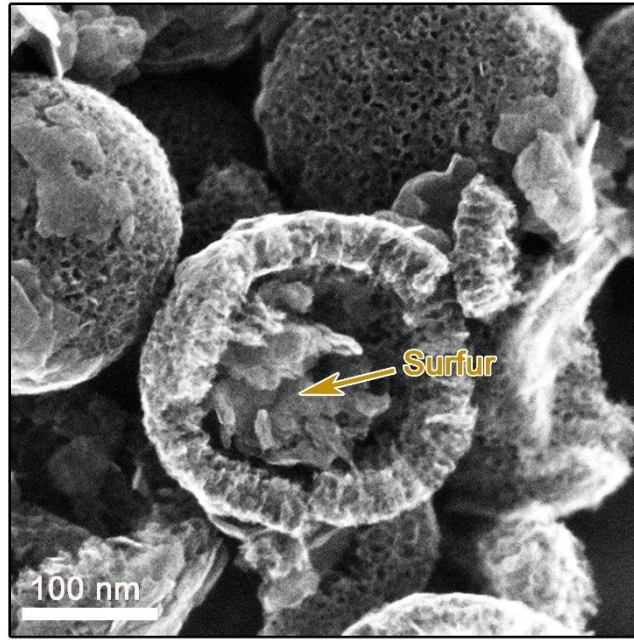


Figure S5 High resolution SEM image of MoS₂@HCS/S cathodes.

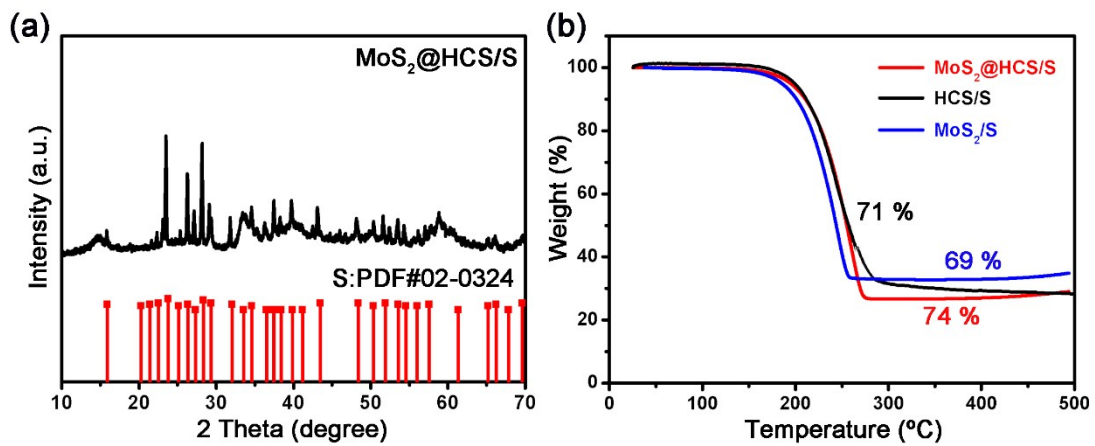


Figure S6 The XRD spectrum (a) of the as prepared MoS₂@HCS/S electrodes suggests the successful loading of sulfur. The TG curve (b) illustrates the 74%, 71% and 69% of sulfur loading amount for MoS₂@HCS/S, HCS/S and MoS₂/S electrodes.

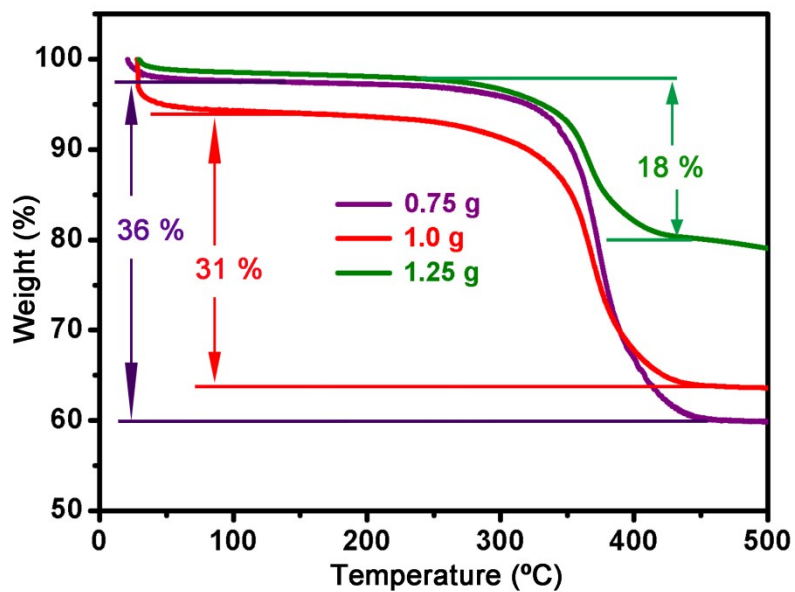


Figure S7 TGA curves of MoS₂@HCS nanocomposites with different MoS₂ growth amount.

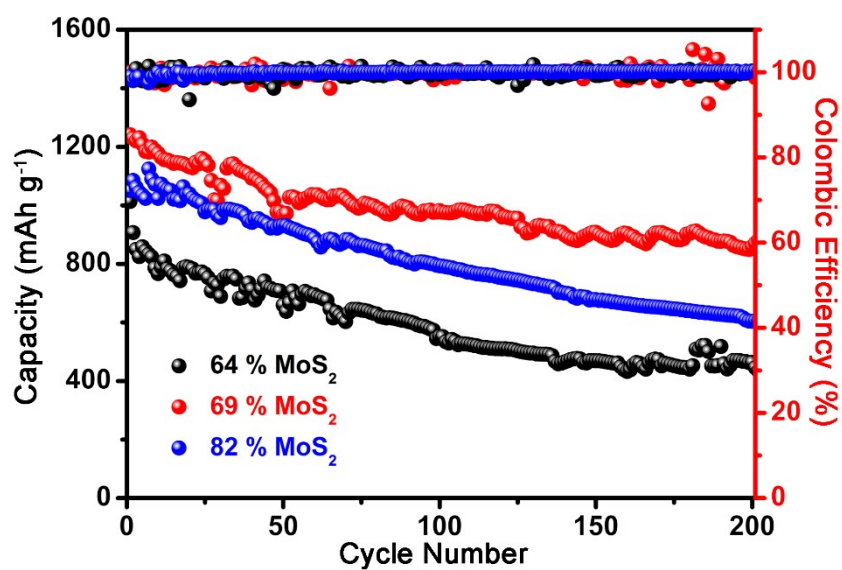


Figure S8 The cycling performance of MoS₂@HCS/S cathodes with different MoS₂ growth amount under the current density of 0.5 C.

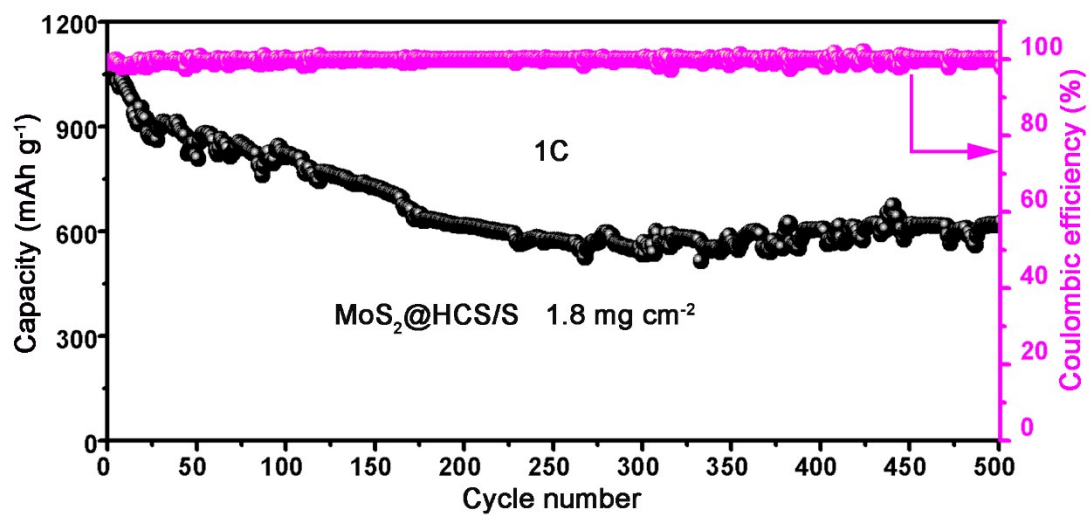


Figure S9 The cycling performance of MoS₂@HCS/S electrodes at the current density of 1C and the sulfur loading of 1.8 mg·cm⁻¹.

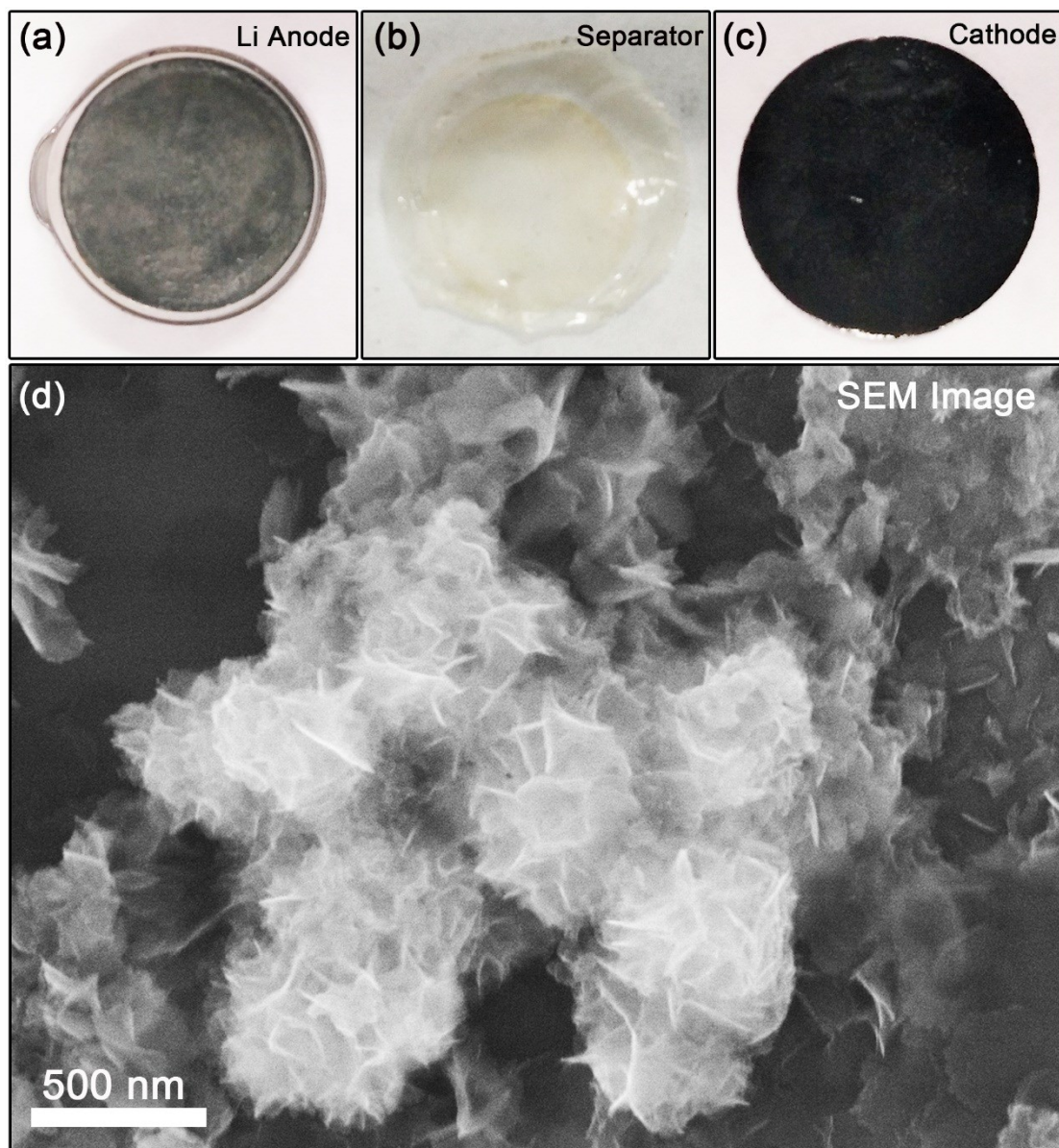


Figure S10 The digital photographs of (a) Li anode, (b) separator and (c) cathode after 500 cycles illustrate no obvious yellow color. The SEM image (d) suggests the excellent morphology retention of MoS₂@HCS/S electrodes.