Electronic Supplementary Information

Encapsulating sulfur into highly graphitized hollow carbon spheres as high performance cathode for lithium-sulfur batteries

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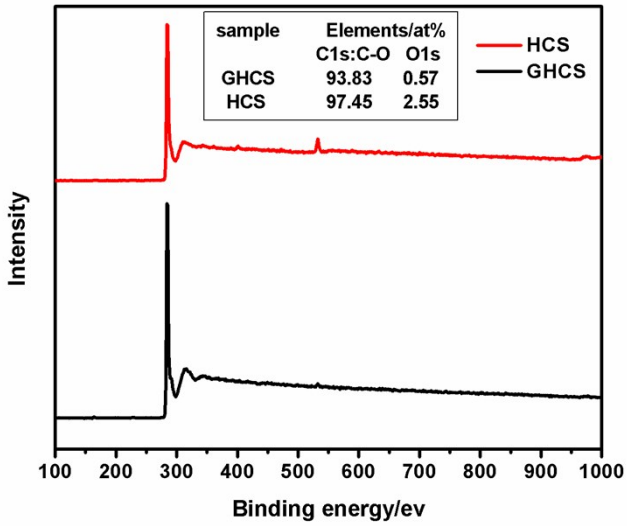

Figure S1 X-ray photoelectron spectra of survey scans and chemical compositions of the HCS and GHCS composites

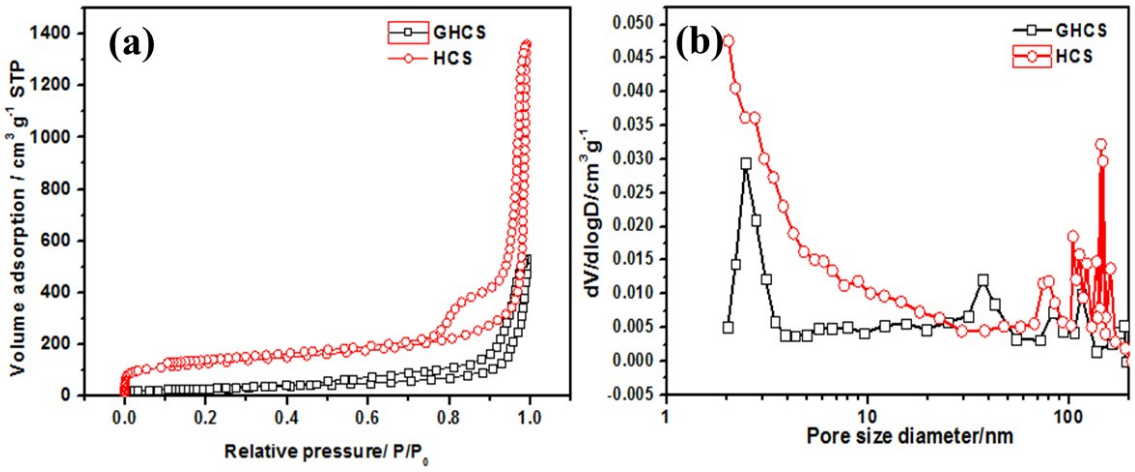

Figure S2 (a) Nitrogen sorption isotherms and (b) pore size distributions of GHCS and HCS samples

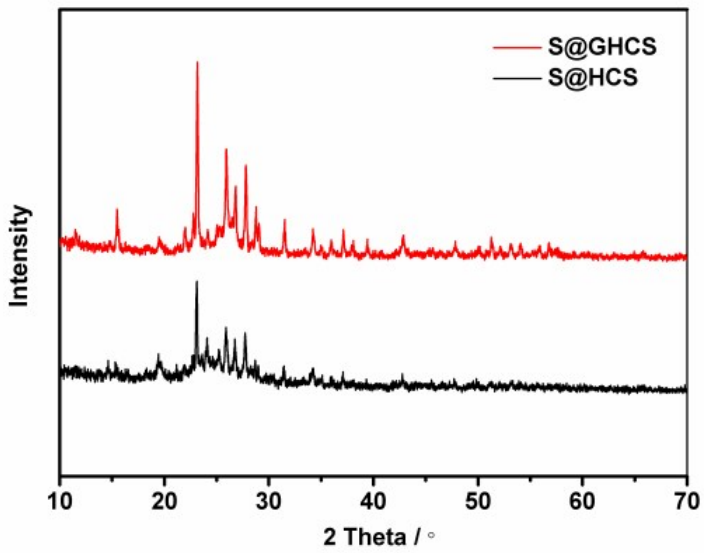

Figure S3 XRD patterns of the S@HCS and S@GHCS samples

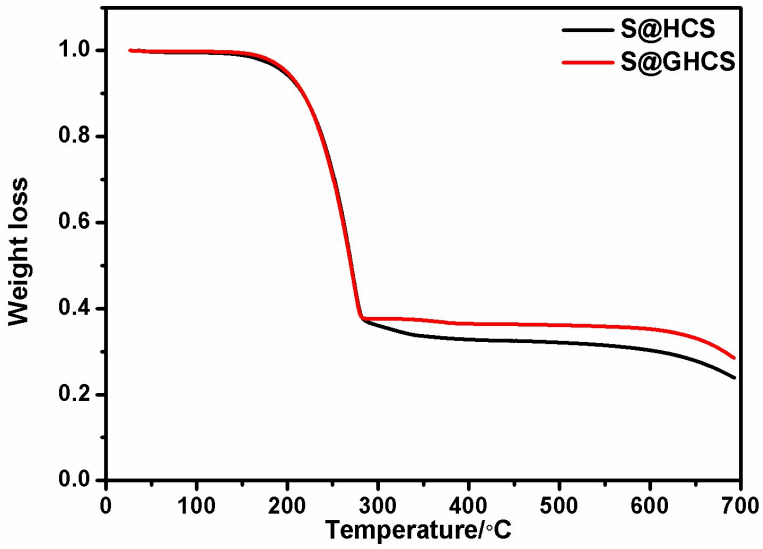

Figure S4 TGA curves of the S@HCS and S@GHCS samples

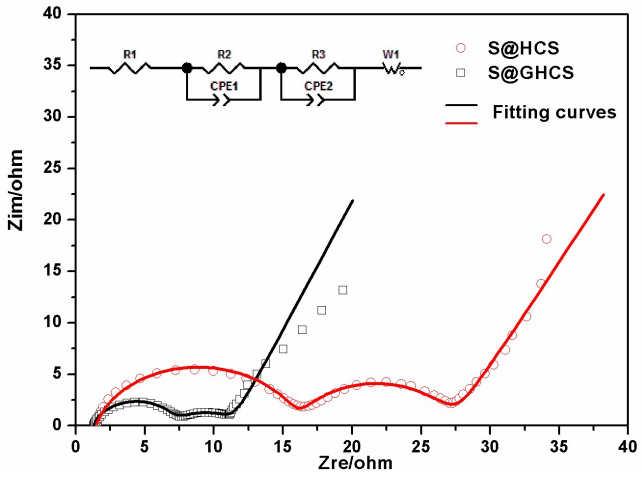

Figure S5 EIS impedance of the fresh coin cells of the S@HCS and S@GHCS electrodes

Table S1 Fitted Parameters of Nyquist Plot of the S@HCS and S@GHCS electrodes

	R1 (Ω)	CPE1-T ($\Omega^{-1}cm^{-2}s^{-p}$)	CPE1-P	R_{ct} (Ω)	CPE2-T ($\Omega^{-1}cm^{-2}s^{-p}$)	CPE2-P	R3 (Ω)	W-R (Ω)	W-T ($\Omega\ S^{-1/2}$)	W-P
S@HCS	1.43	1.21×10^{-5}	0.84	14.48	4.5×10^{-3}	0.8	10	4	2.3	0.355
S@GHCS	1.25	3.88×10^{-5}	0.84	5.74	1.81×10^{-2}	0.6	4	1.2	0.4	0.379

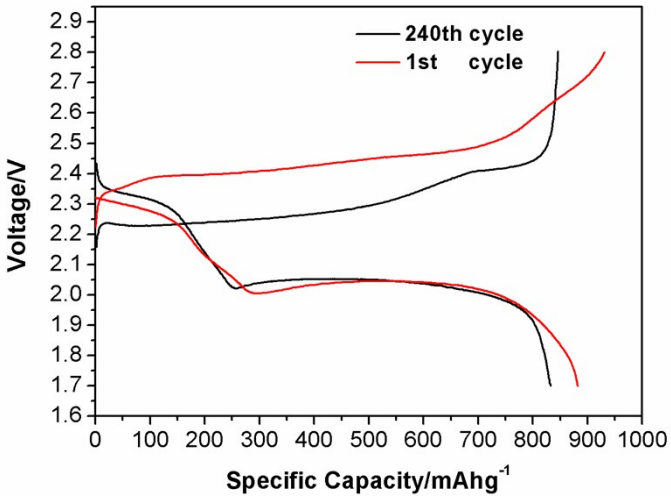

Figure S6 The first and 240th charge-discharge curves of the S@GHCS electrode

Table S2 The electrical conductivity of the HCS and GHCS.

Sample	Electrical conductivity/S cm^{-1}
HCS	6.76×10^{-2}
GHCS	1.52×10^{-1}