

In situ sulfur deposition route to obtain sulfur-carbon composite cathodes for lithium-sulfur batteries

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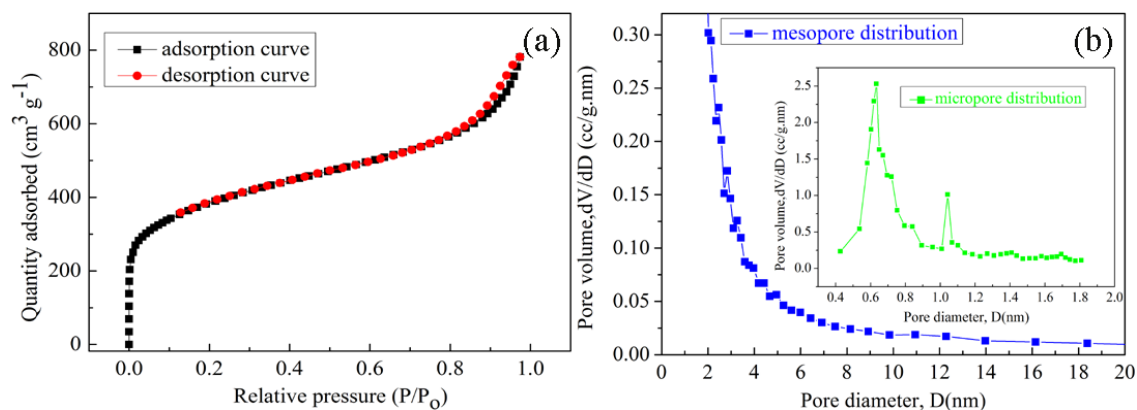


Fig. S1 BJH of adsorption isothermal curve (a) and BJH mesopore distributions, HK micropore distributions (b) of conductive carbon black.

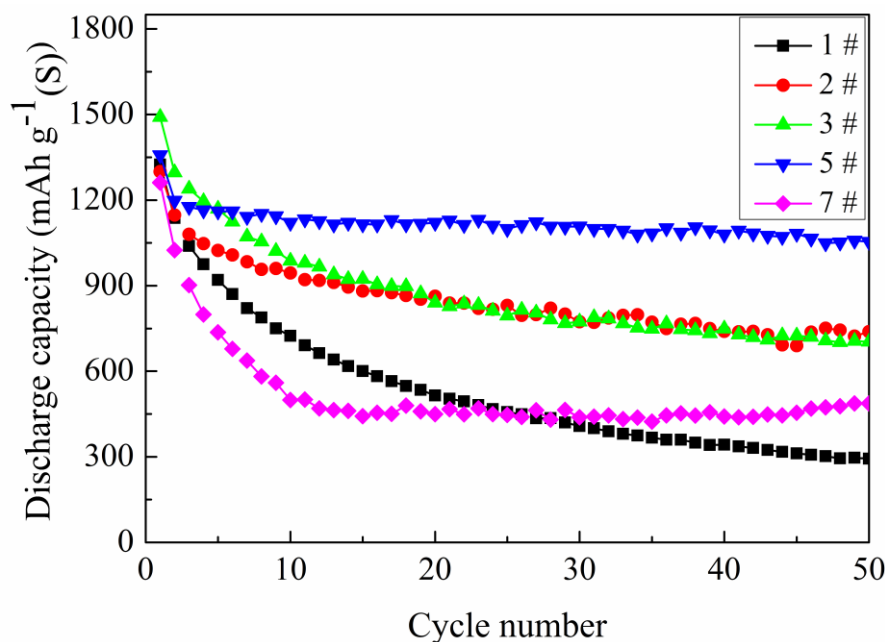


Fig. S2 Cyclic performance of as-prepared S/CCB composite with 56 wt.% S in different concentration electrolyte (1#: 1 mol·L⁻¹, 2#: 2 mol·L⁻¹, 3#: 3 mol·L⁻¹, 5#: 5 mol·L⁻¹, 7#: 7 mol·L⁻¹).

Table S1: The fitting data from EIS spectra using the equivalent circuit shown in Fig.10 (d and e)

Sample	cycle	R_s (Ω)	R_{ct} (Ω mg)	Z_w (Ω mg)	R_2 (Ω)
52 wt.% S/CCB	0	8.6	424.9	326.3	-----
	1st	11.4	72.5	148.5	-----
	5th	13.5	35.1	239.9	-----
	10th	14.5	28.3	293.4	-----
	50th	14.9	29.3	232.2	57.2
	70th	16.9	32.6	216.3	62.1
	100 th	18.5	32.9	175.2	39.4
56 wt.% S/CCB	0	22.3	433.8	111.5	-----
	1st	18.1	46.3	111.4	-----
	5th	21.3	13.8	132.9	-----
	10th	20.1	13.7	132.8	-----
	50th	21.7	16.4	162.9	21.9
	70th	22.2	19.7	169.5	26.6
	100th	15.4	21.6	183.6	39.7
62 wt.% S/CCB	0	12.9	446.9	215.2	-----
	1st	12.3	62.6	392.9	-----
	5th	13.4	39.7	332.9	224.7
	10th	15.5	42.6	85.6	275.0
	50th	15.6	47.1	86.5	399.8
	70th	17.2	53.7	90.2	326.1
	100th	18.3	61.5	148.1	184.4