

Approach	discharge Capacity (mAh/g)	Reversible discharge capacity (mAh/g)	Charge rate (mA/g)	Total cycle number	Degradation rate per cycle	Sulfur Loading	Ref.
SULFUN	1000-1400	520 (300 th , 0.2C) 290 (500 th , 0.2C) 400 (250 th , 2C)	335 (0.2C) 3350 (2C)	>500	0.24% (0.2C) 0.36% (2C)	65 wt% (2mg/cm ²)	Current work
S-TiO ₂ yolk-shell nanocomposite	1,030	690	836 (C/2)	1,000	0.033%	53 wt % 0.4–0.6 mg/cm ²	12
Solvent-in-salt electrolyte	1,041	770	335 (C/5)	100	0.26%	48 wt %	15
Ordered mesoporous C-S	1,070	700	1675 (1C)	100	0.35%	57 wt %	27
Double-shelled C-S composite	1,020	690	167 (C/10)	100	0.32%	45 wt %	28
Porous hollow C-S composite	1,071	974	836 (C/2)	100	0.09%	65 wt %	19
Hollow CNF-encapsulated S	~1,400	730	836(C/2)	150	0.48%	~1.0 mg / cm ²	25
Amphiphilic surface-modified hollow CNF-S	828	~660	836 (C/2)	300	0.07%	~1.0 mg / cm ²	29
Ultrasound-assisted S-C with fluorinated ether	1,195	836	230	100	0.30%	29 wt %	30
S molecules in a C/CNT matrix	1,670	1,142	167.5 (C/10)	200	0.16%	32 wt %	31
Li-S with interlayers with modified recharge setting	1,483	600 and 1000	335 (C/5)	>300 (600mAh/g) >200 (1000mAh/g)	0.0011% (600mAh/g) 0.0027% (1000mAh/g)	70 wt%	14

Table S1

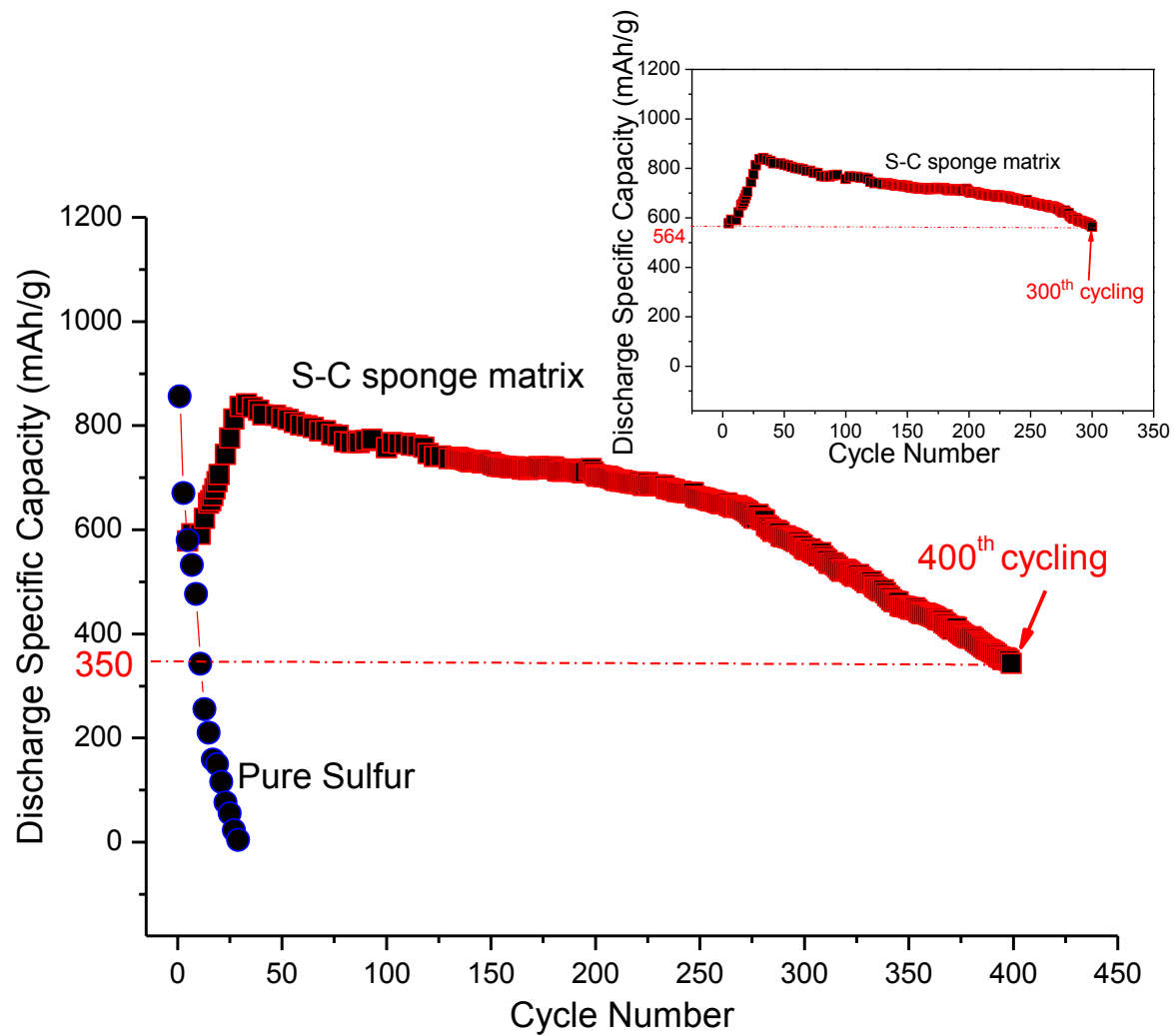


Fig. S1

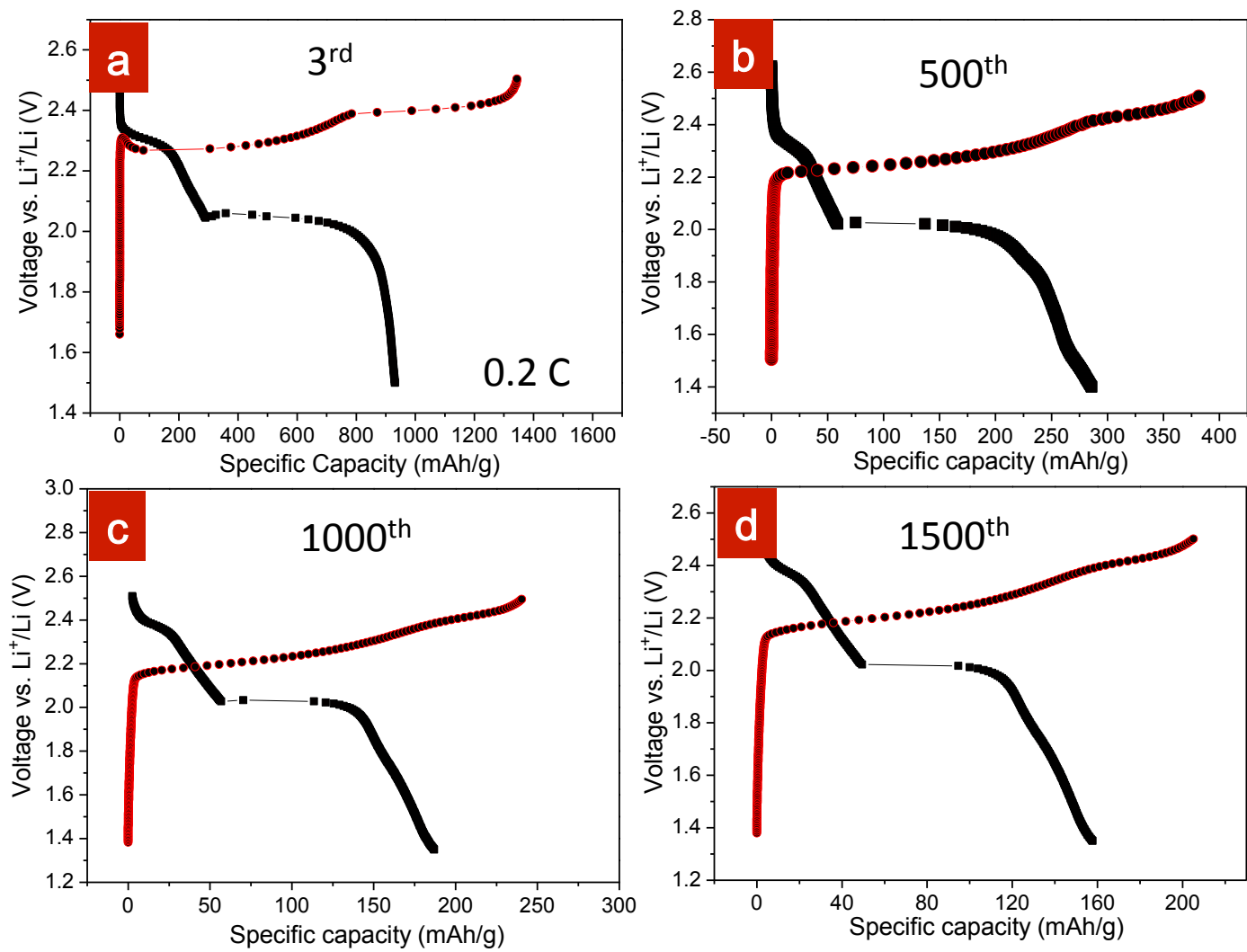


Fig. S2

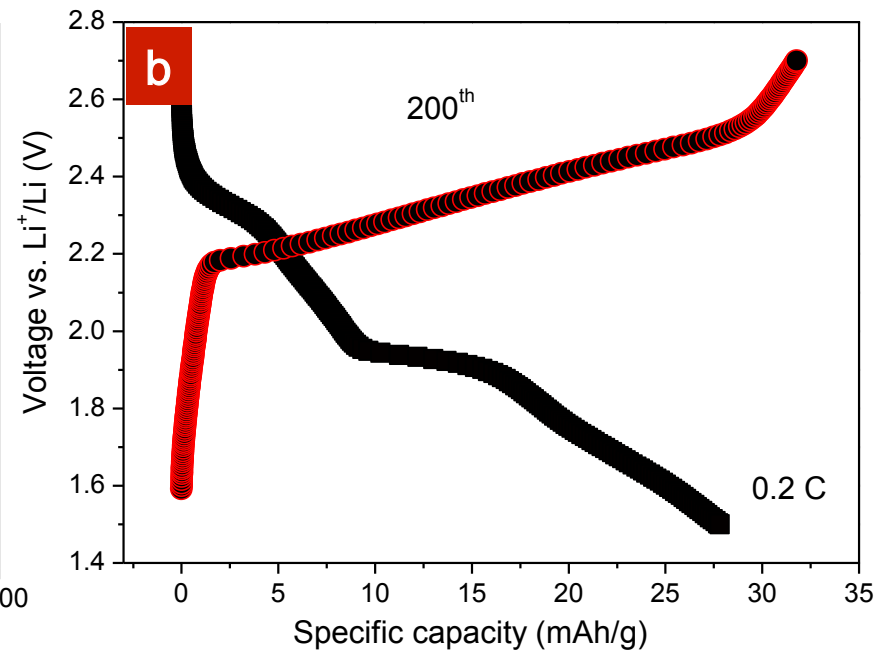
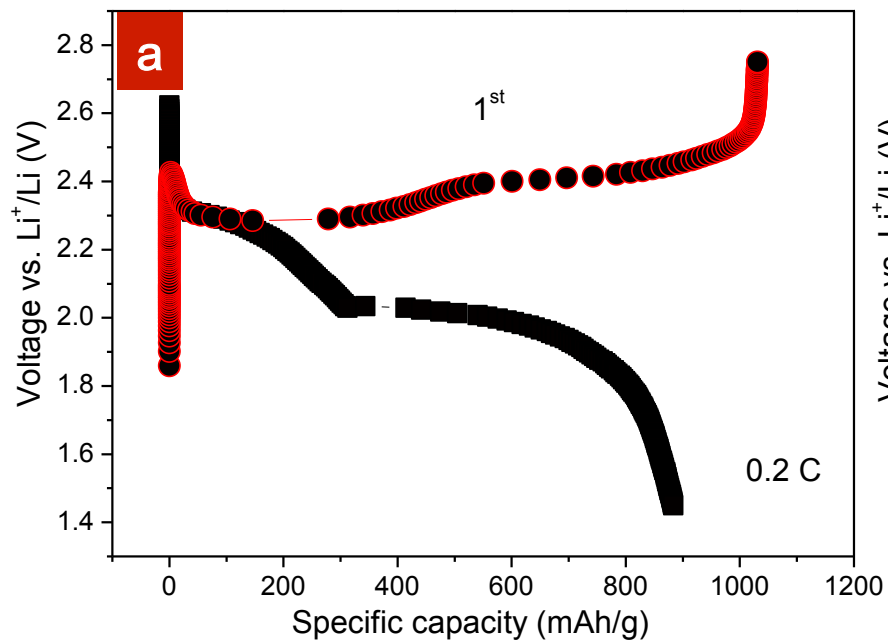


Fig. S3

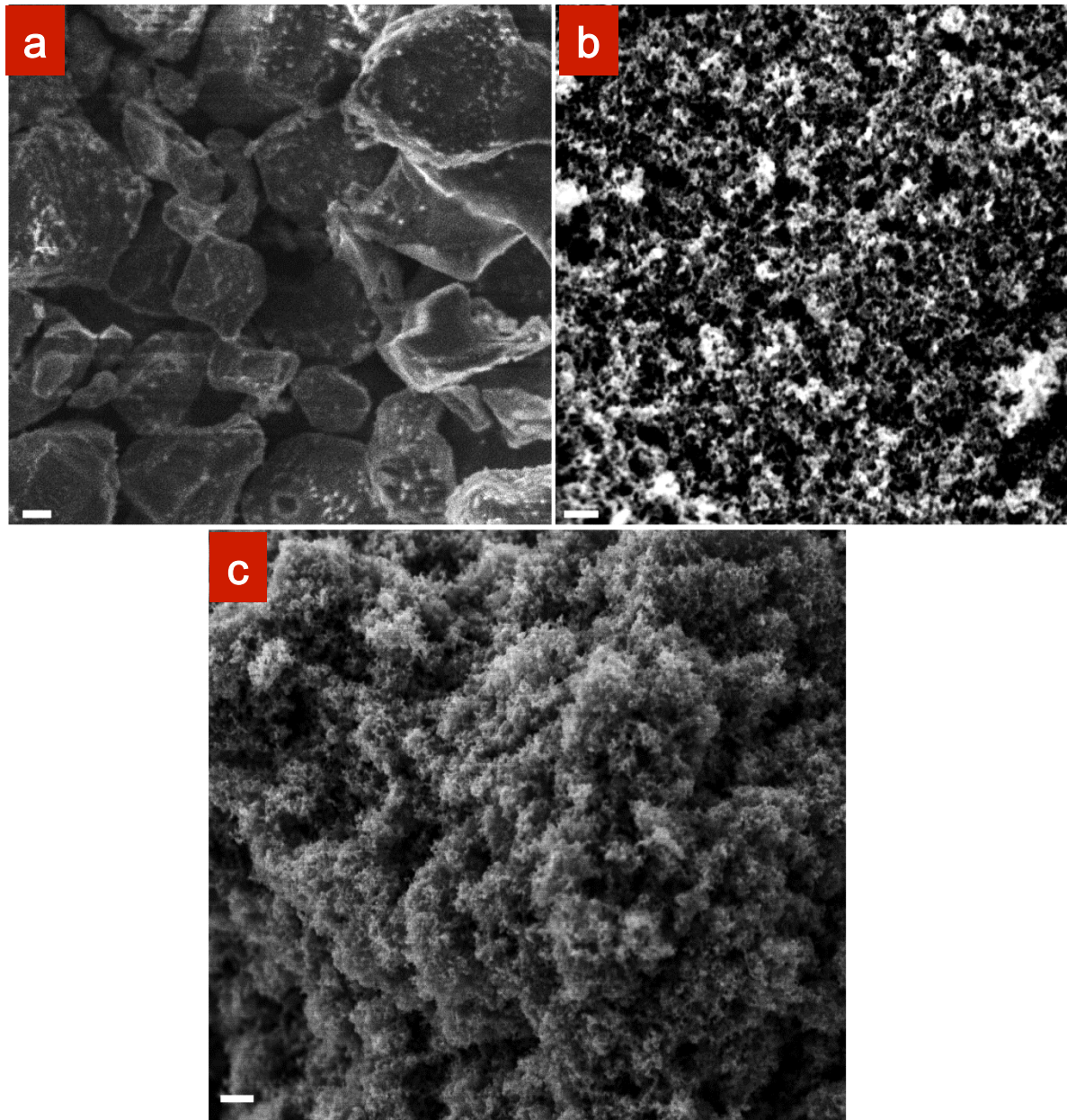


Fig. S4

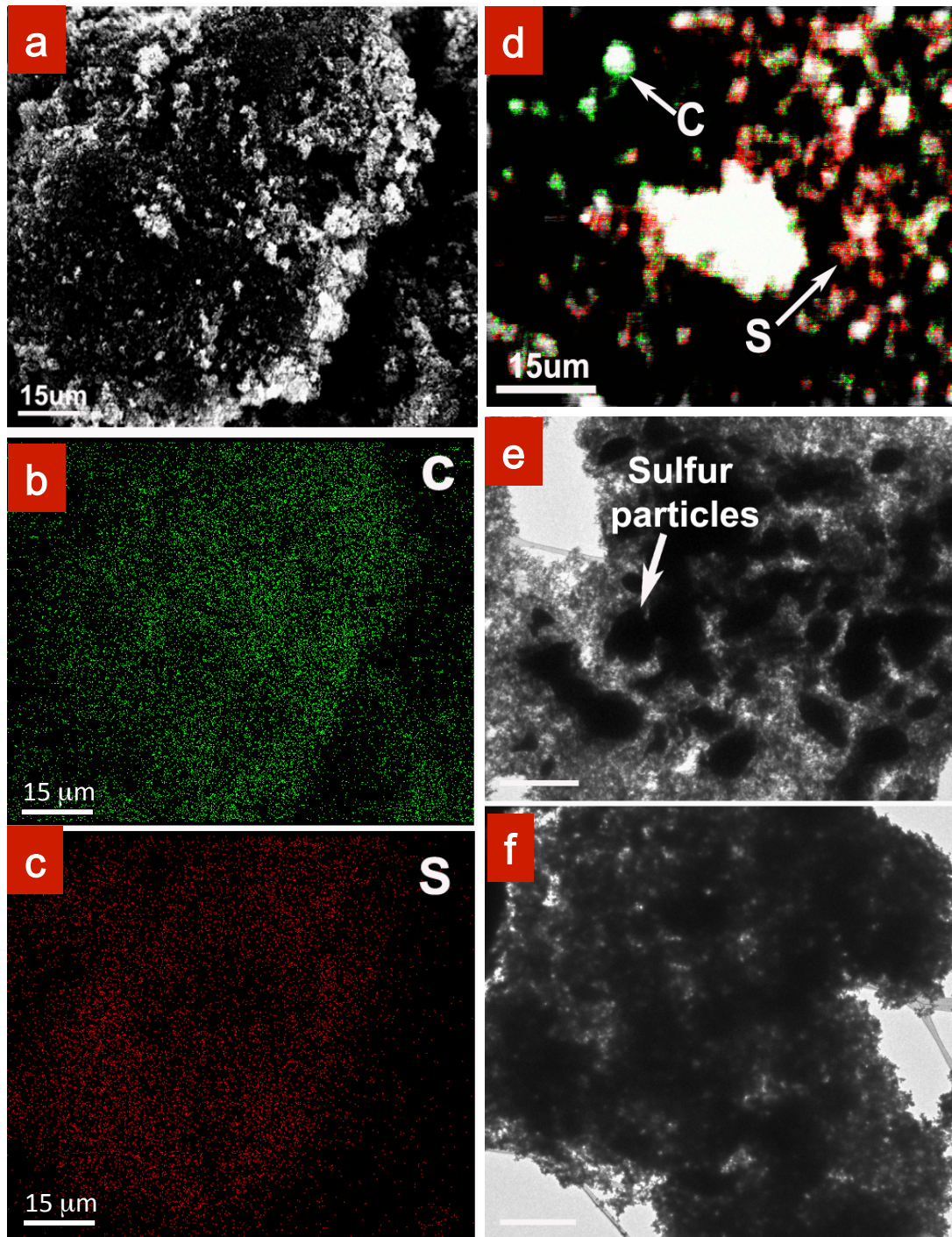


Fig. S5

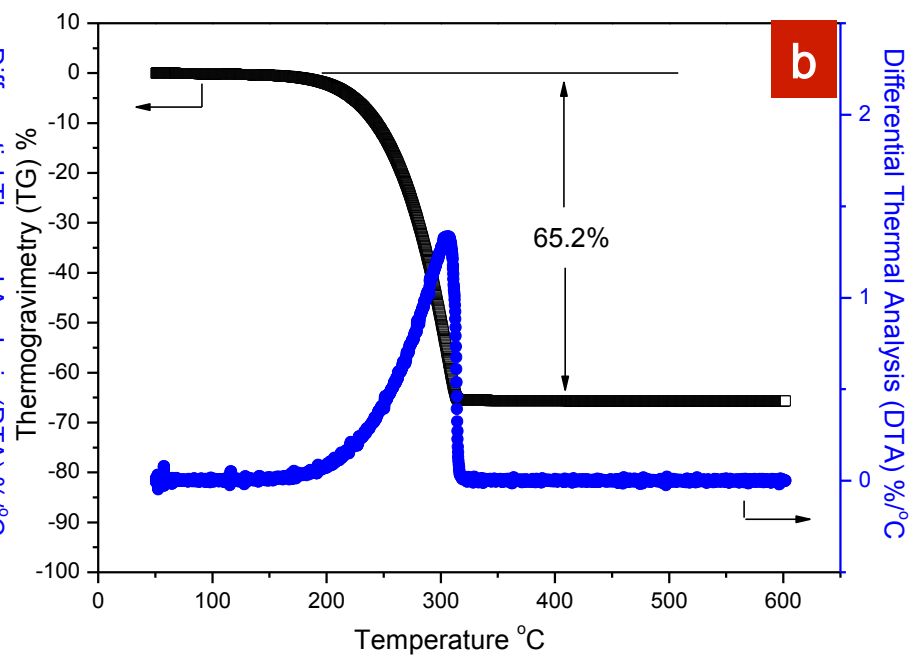
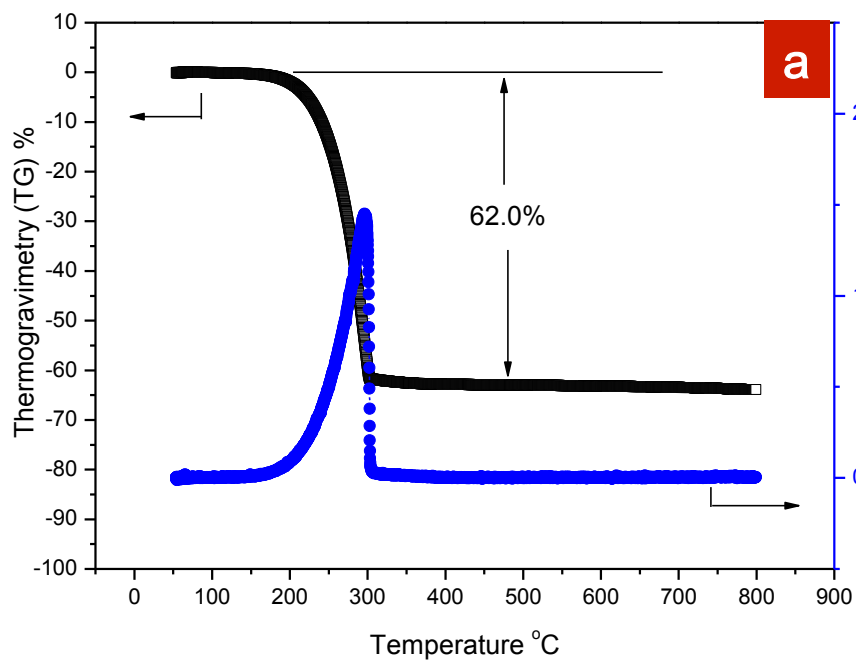


Fig. S6

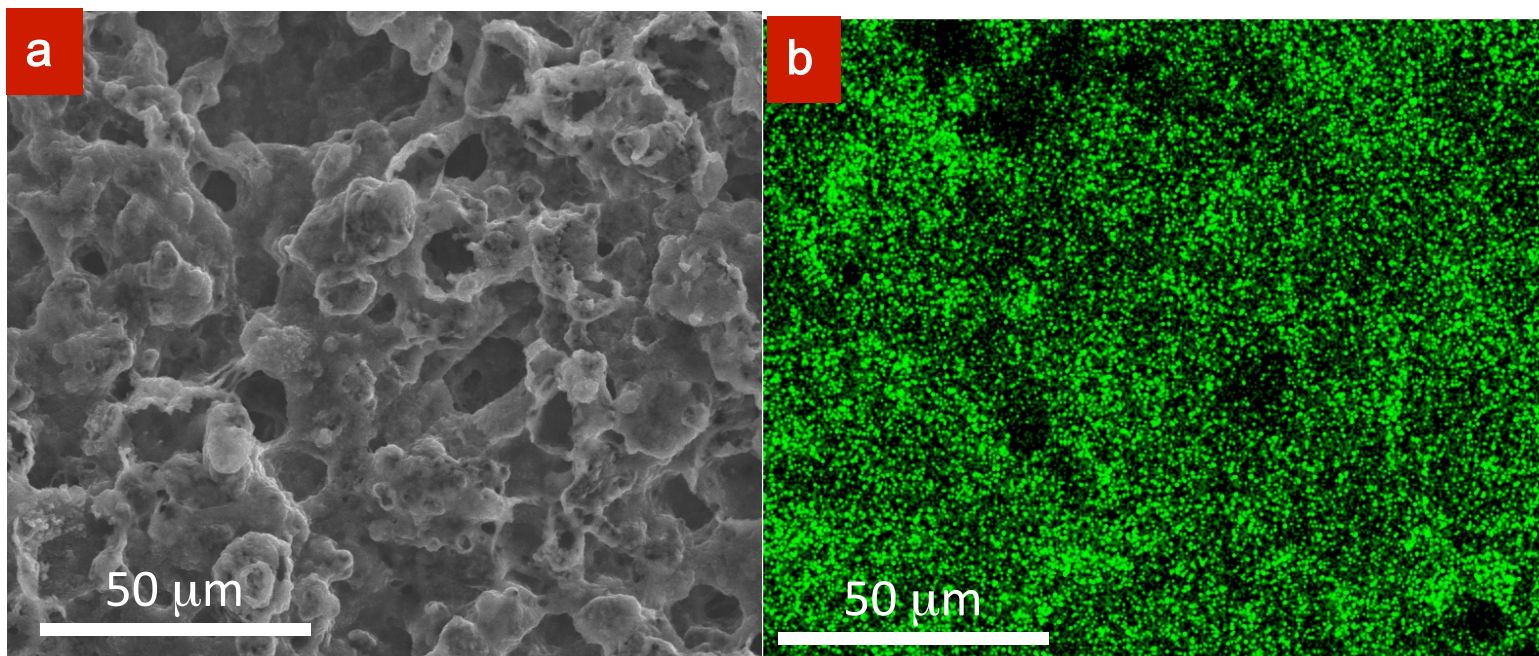


Fig. S7

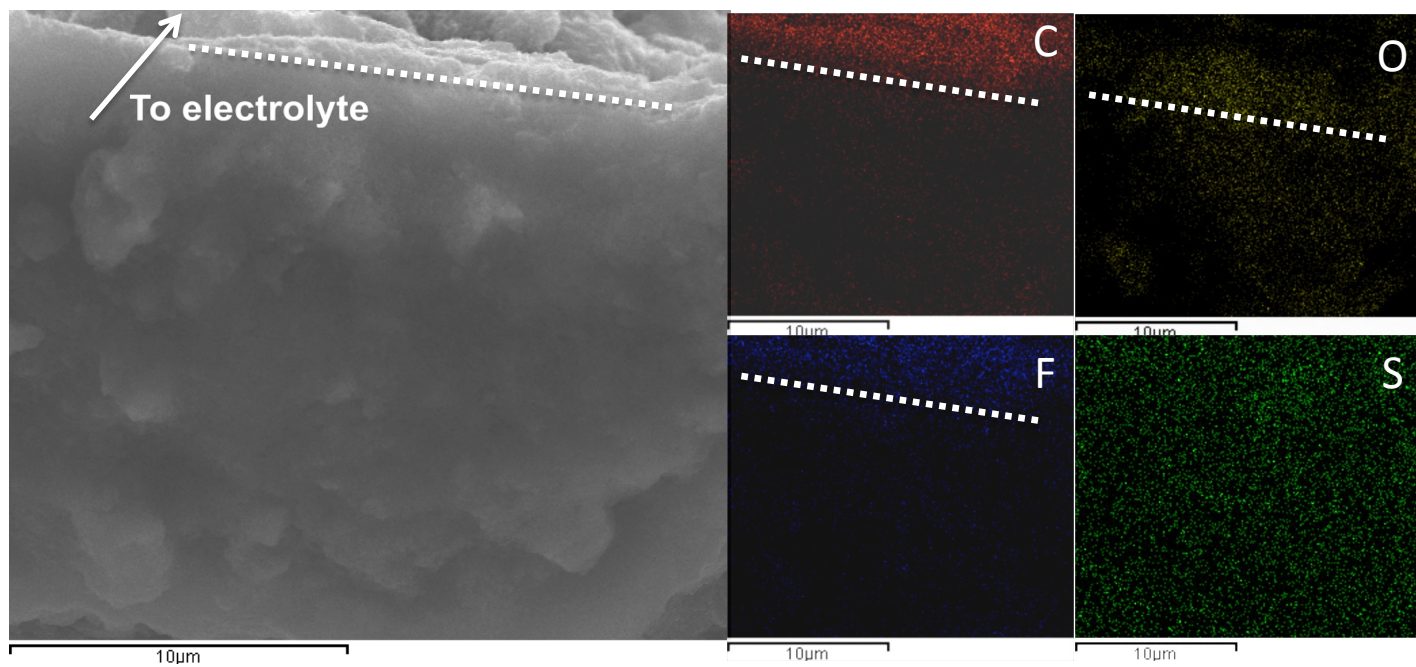


Fig. S8

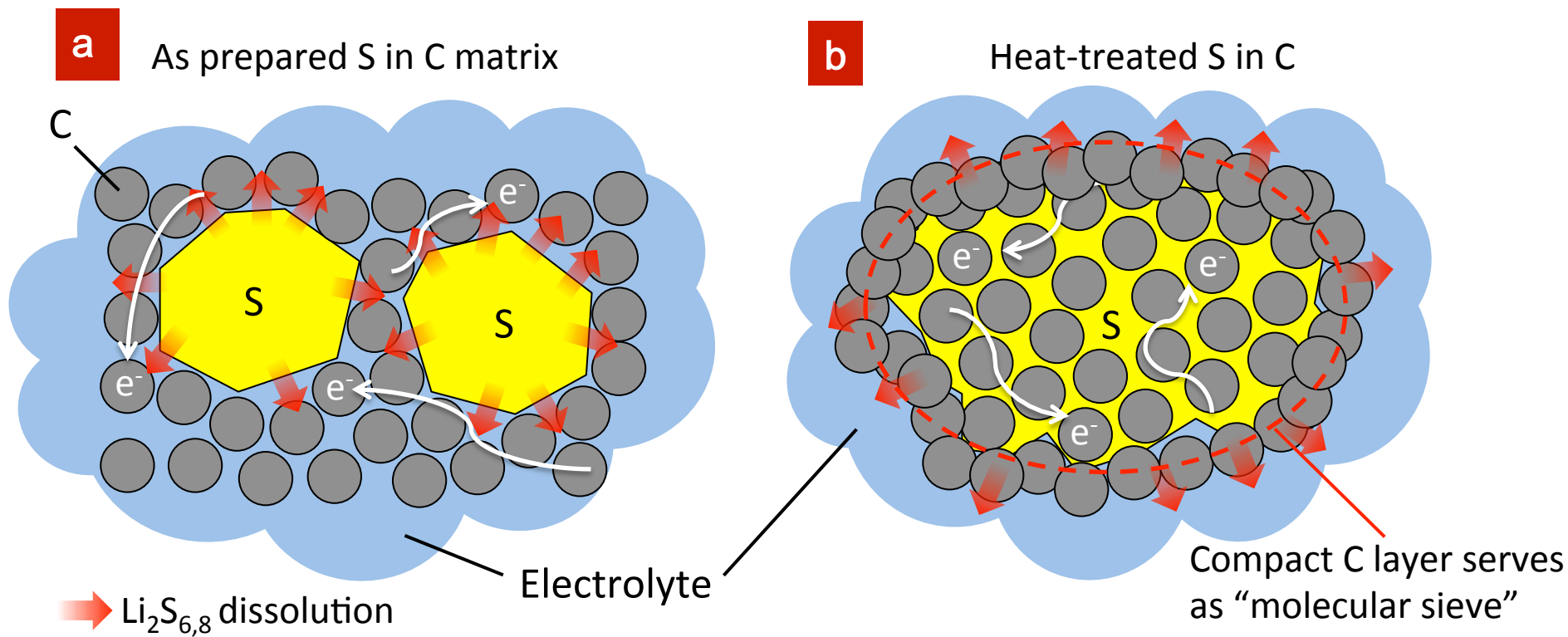


Fig. S9