Supplementary Information

Super-aligned carbon nanotube/graphene hybrid materials as framework for sulfur cathodes in high performance lithium sulfur batteries

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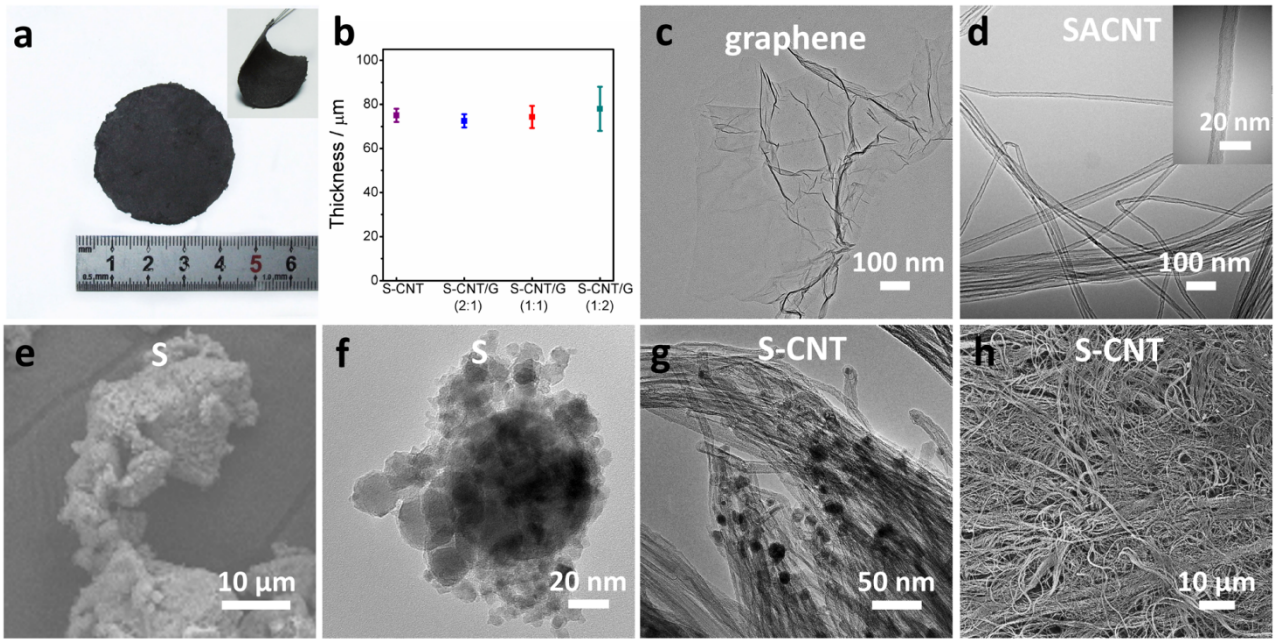

Fig. S1 (a) Photo of the S-CNT/G composite with CNT/G ratio of 1:1. The inset of (b) demonstrates its flexibility. (b) Thickness distribution of the S-CNT and S-CNT/G composites. TEM images of (c) graphene and (d) SACNTs. The inset of (d) gives the HRTEM image of an SACNT. (e) SEM and (f) TEM images of raw sulfur particles. (g) TEM and (h) SEM images of the S-CNT composite.

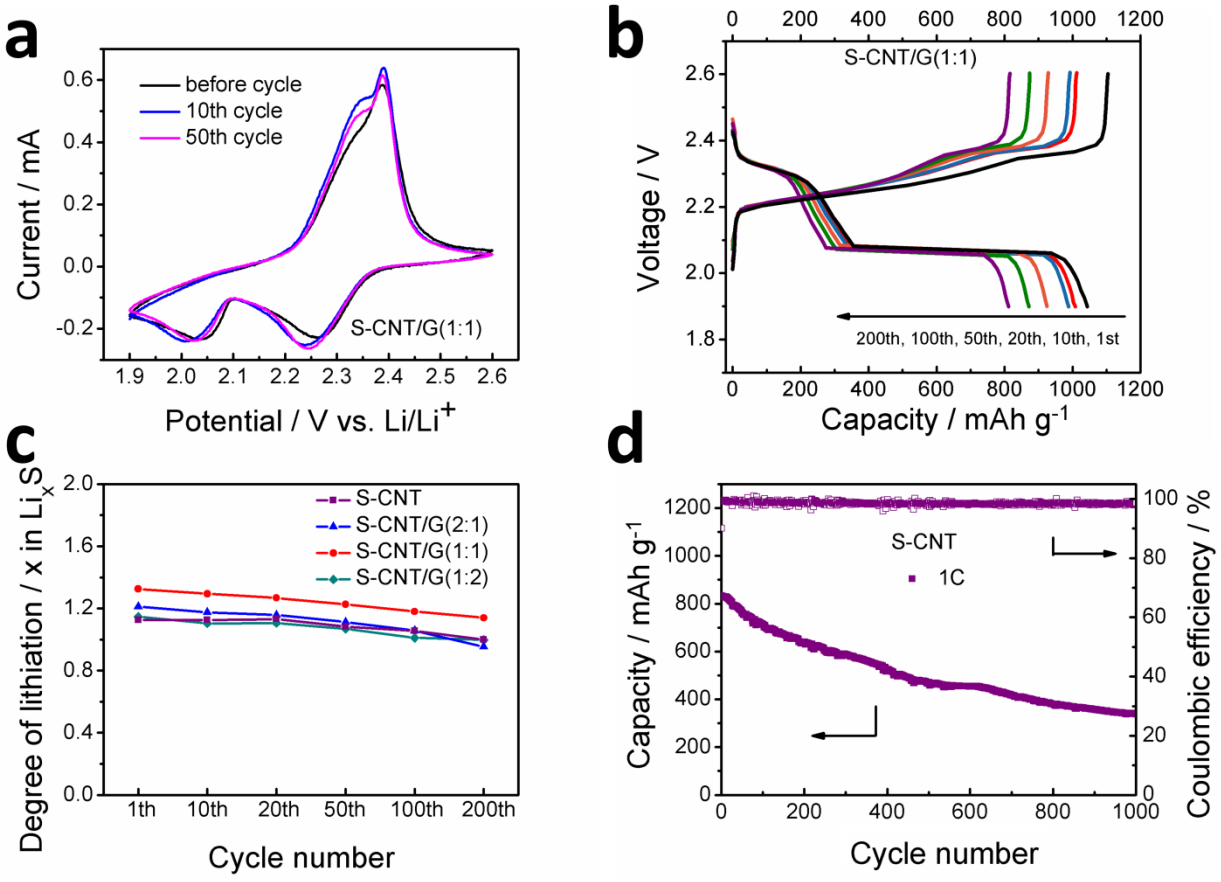

Fig. S2 (a) CV curves of the S-CNT/G composite with CNT/G ratio of 1:1 before cycling, after the 10th, and 50th cycle at 1 C. (b) charge-discharge curves of the S-CNT/G composite with CNT/G ratio of 1:1 at 1 C. (c) Degree of lithiation of the S-CNT and S-CNT/G composites in 200 cycles at 1 C. (d) Long term cycling behavior of the S-CNT composite at 1 C.