Electronic Supplementary Material (ESI) for RSC Advances.
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Supplementary Material

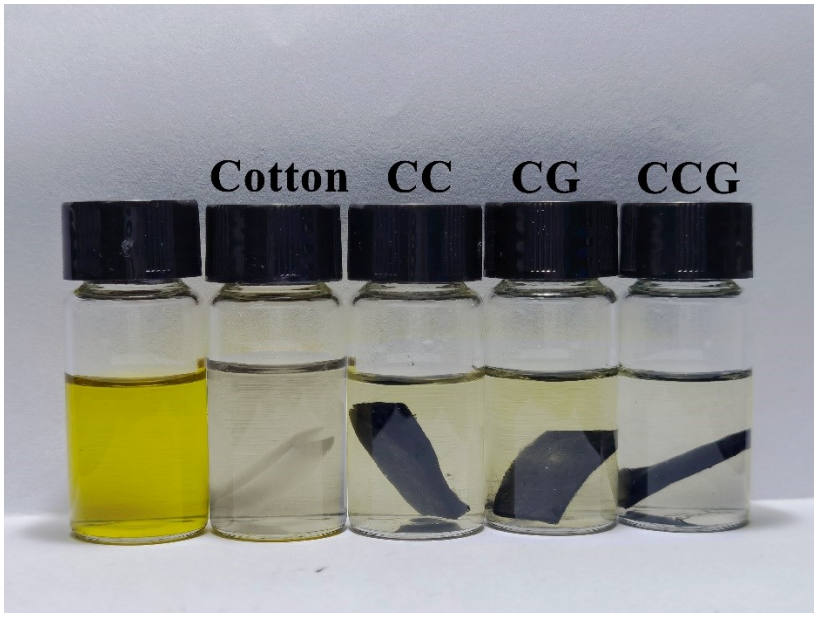

Figure S1. Photograph of different substrate with Li_2S_6 polysulfide absorption test after 24 h.

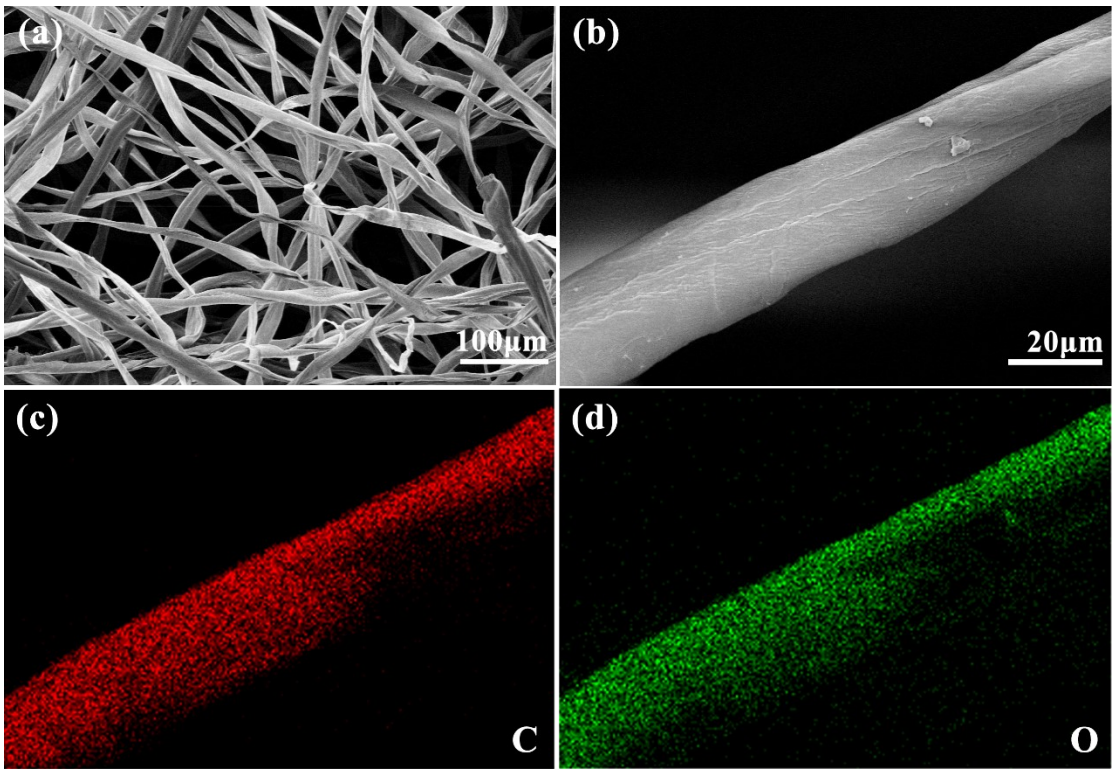

Figure S2. SEM images of cotton fibers at (a) low magnification, (b) higher

magnification, (c) corresponding mapping of C element, (d) corresponding mapping of O element.

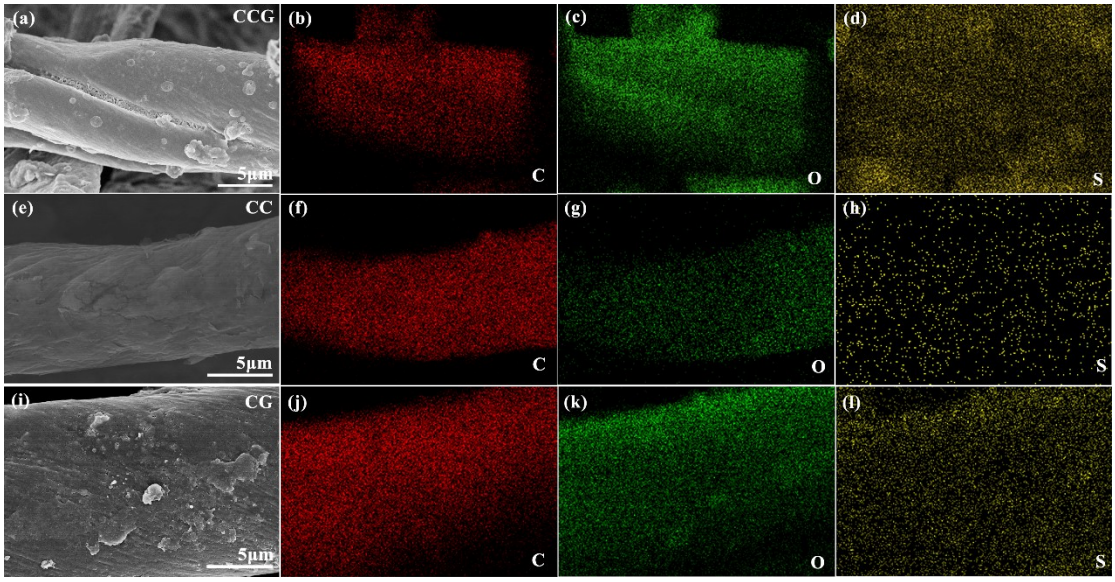

Figure S3. (a-d) SEM images of CCG substate after 50 cycles of charge and discharge and elemental mappings of C, O, S from the fibers. (e-h) SEM images of CC substate after 50 cycles of charge and discharge and elemental mappings of C, O, S from the fibers, (i-l) SEM images of CG substate after 50 cycles of charge and discharge and elemental mappings of C, O, S from the fibers.

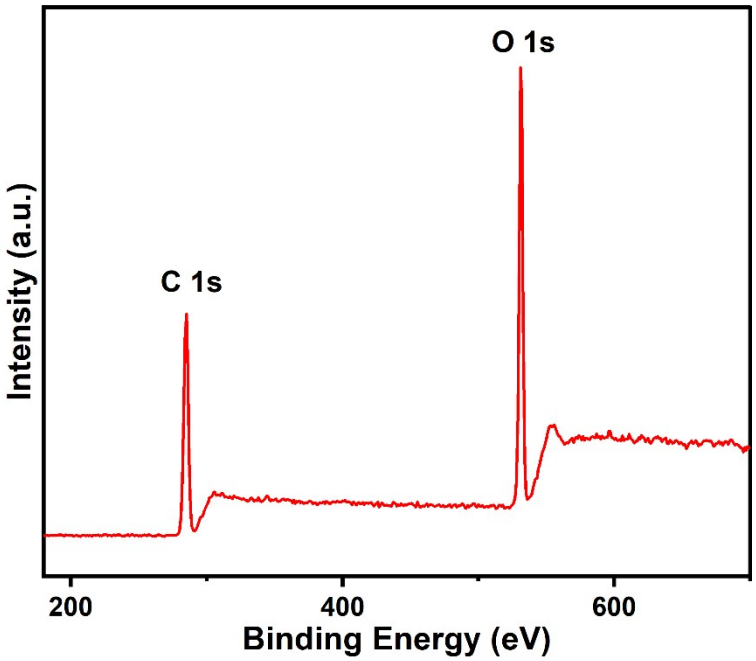

Figure S4. XPS survey spectra of cotton fibers.

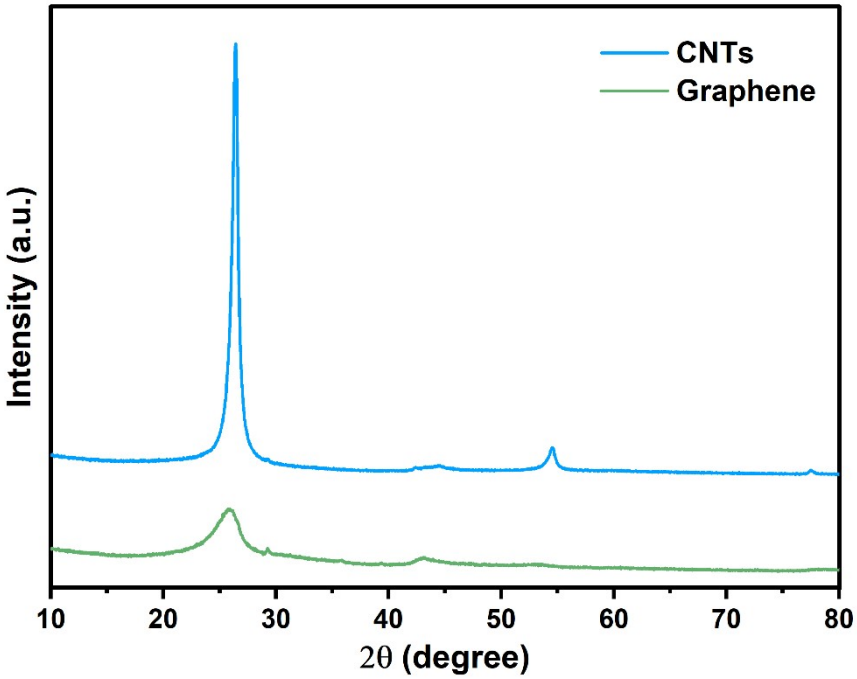

Figure S5. XRD patterns of CNTs and graphene.

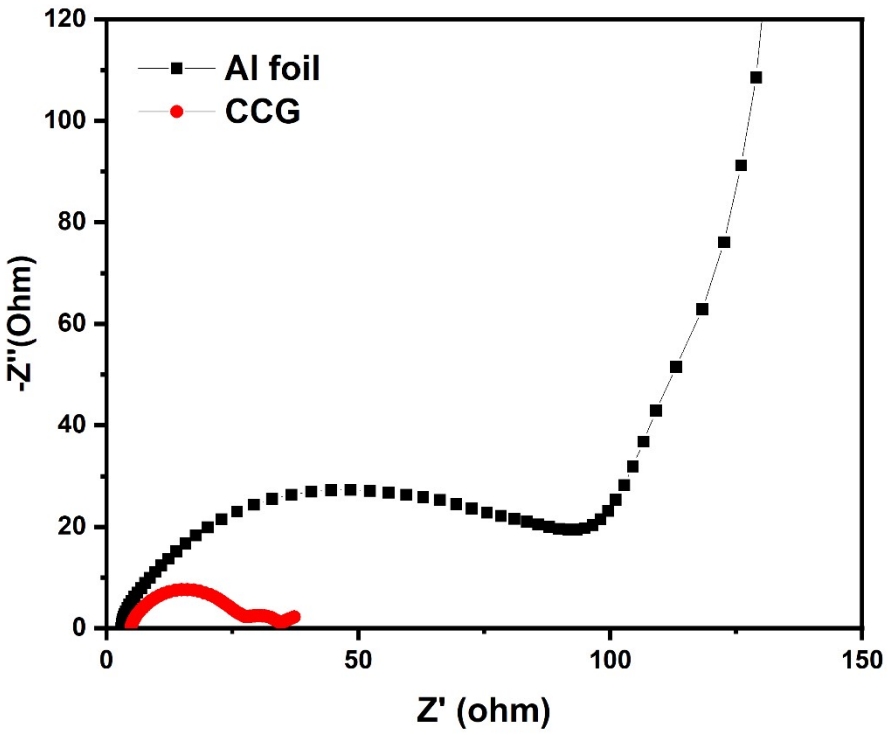

Figure S6. Nyquist plot of electrochemical impedance spectroscopy (EIS) data of Li-S batteries using CCG substrates and traditional Al foil current collector.

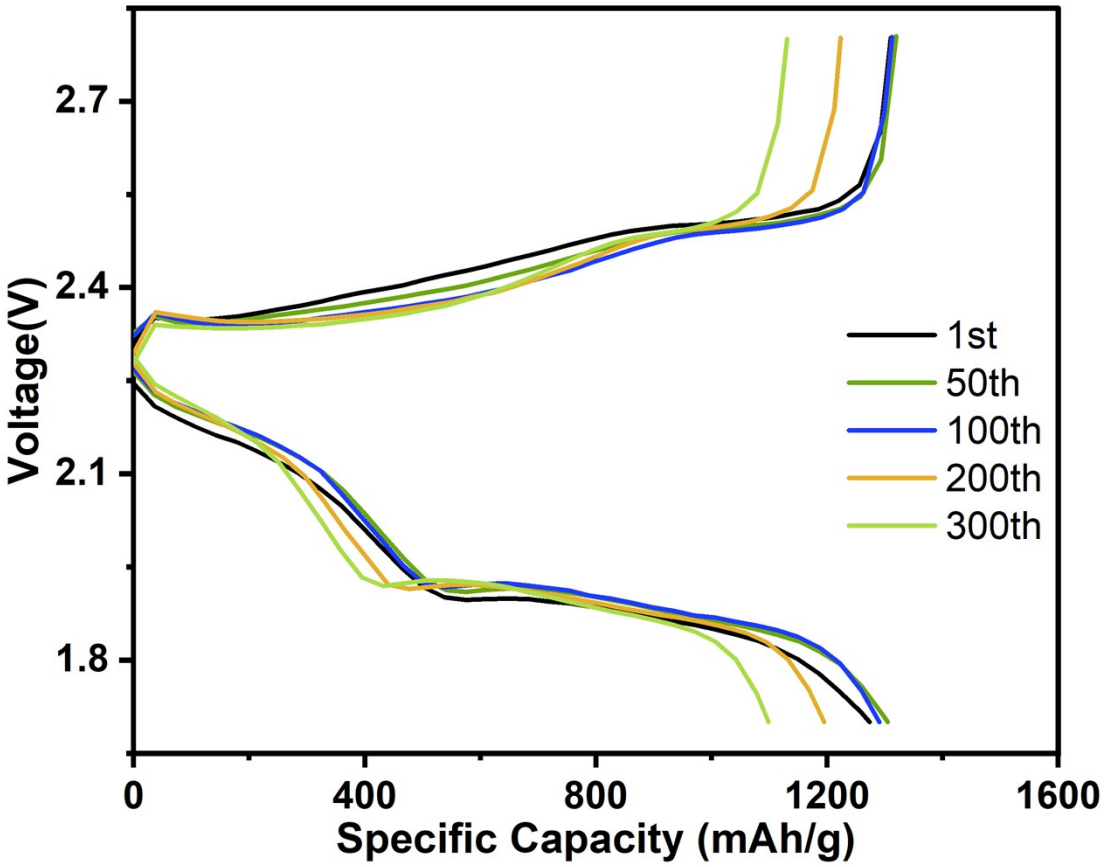

Figure S7. Voltage profiles of battery with CCG substrate at 1.0 C from 1th to 300th.

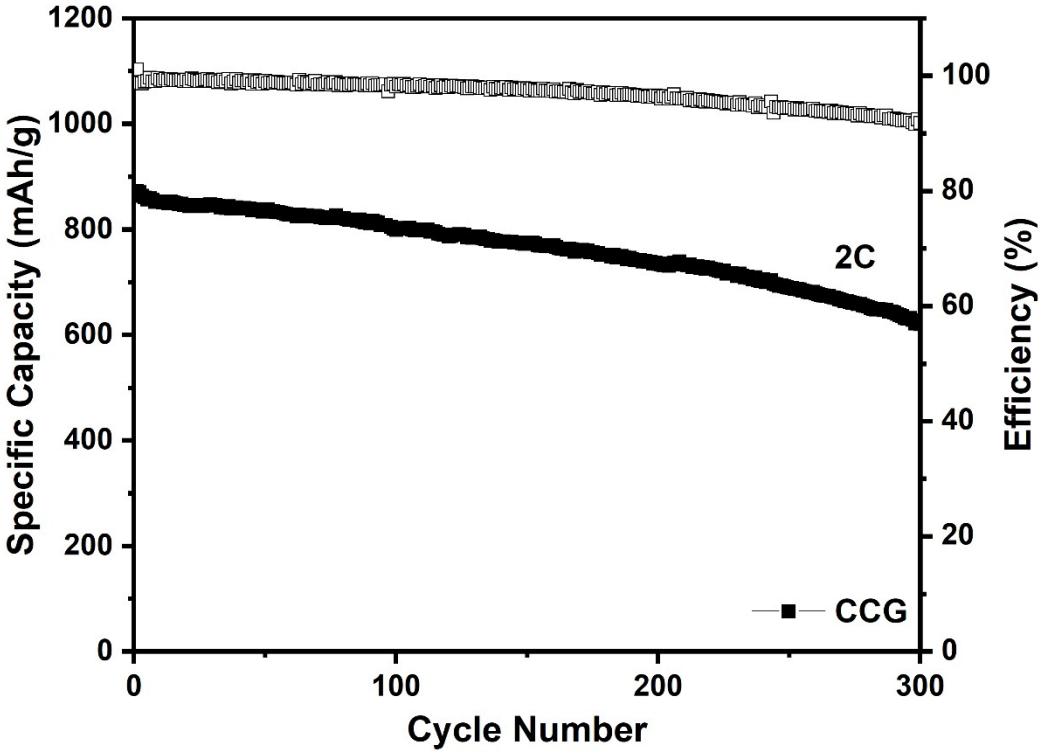

Figure S8. CCG batteries with a sulfur loading of 2.0 mg cm^{-2} charge-discharge cycling curve at 2.0 C.

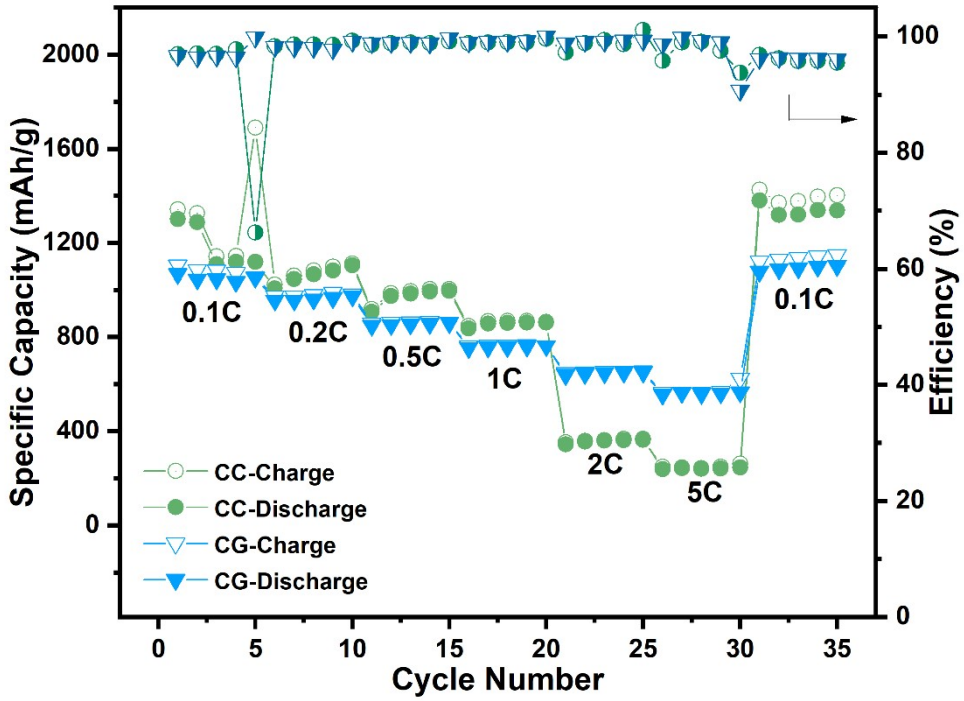

Figure S9. Rate performances of the batteries with CC and CG substrates.