Supporting information

Crumpled graphene-encapsulated sulfur for lithium-sulfur batteries

Xianfei Hu,[a,b] Kaitong Leng,[a,b] Cuijuan Zhang,*[,a,b] Jiayan Luo*[,a,b]

[a.] Key Laboratory for Green Chemical Technology of Ministry of Education, School of Chemical Engineering and Technology, Tianjin University, Tianjin 300350, China

[b.] Collaborative Innovation Center of Chemical Science and Engineering (Tianjin), Tianjin 300350, China

*Corresponding author: cjzhang@tju.edu.cn, jluo@tju.edu.cn

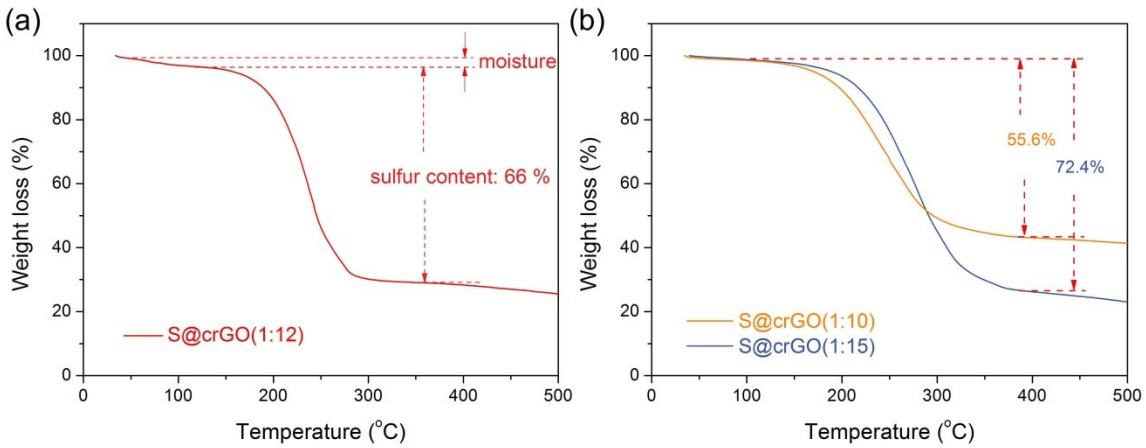

Fig. S1. TGA result of S@crGO with different mass ratios of GO/$Na_2S_2O_3$ in N_2 at a heating rate of 5 °C min^{-1}, (a) 1:12, (b)1:10 and 1:15. The S-loading is 66.0%, 55.6%, and 72.4%, respectively

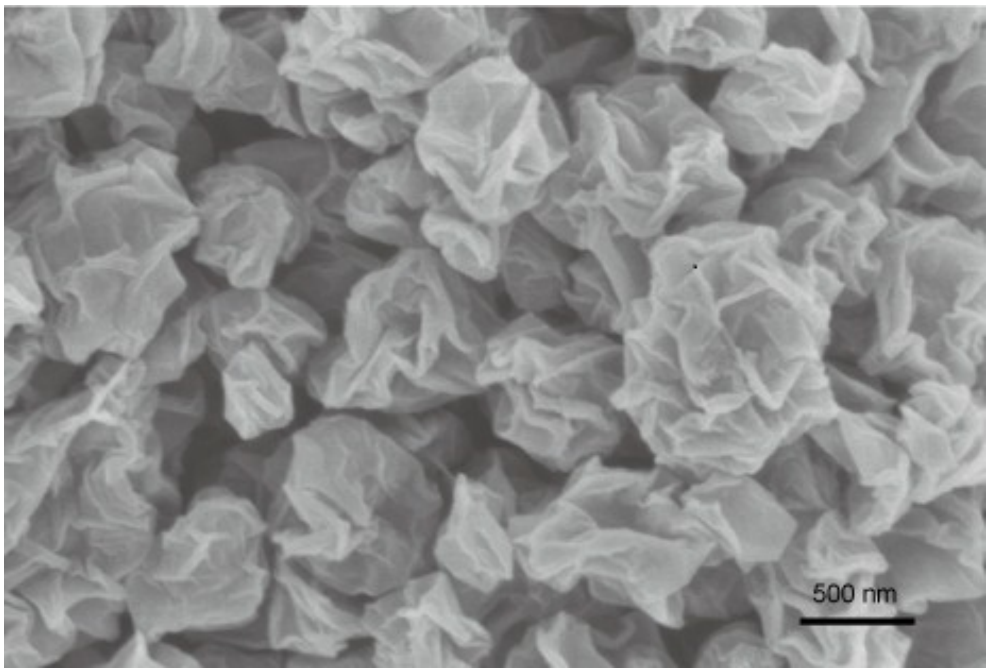

Fig. S2. SEM image of pure crumpled graphene.

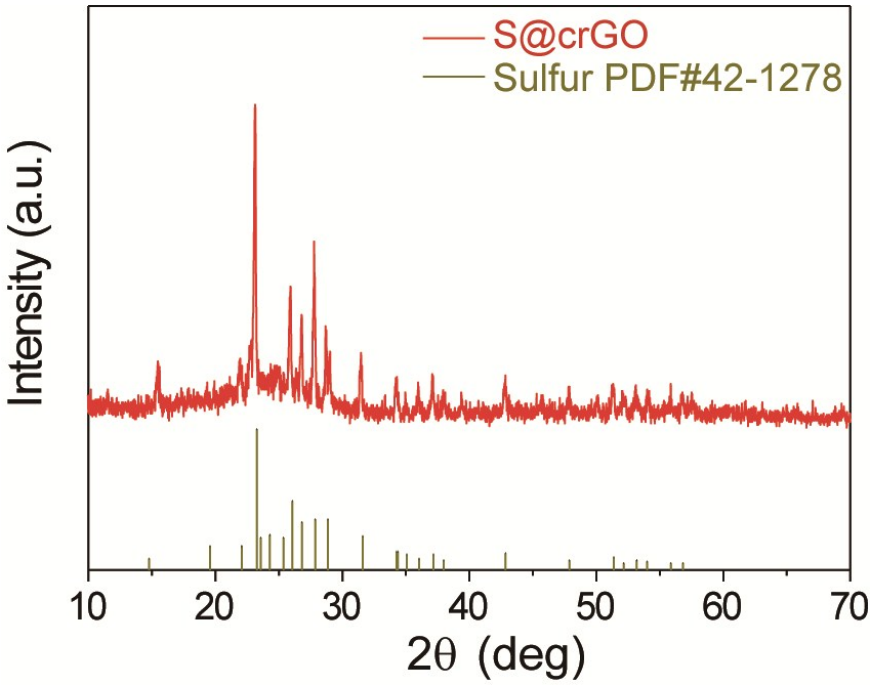

Fig. S3. XRD patterns of S@crGO at room temperature.

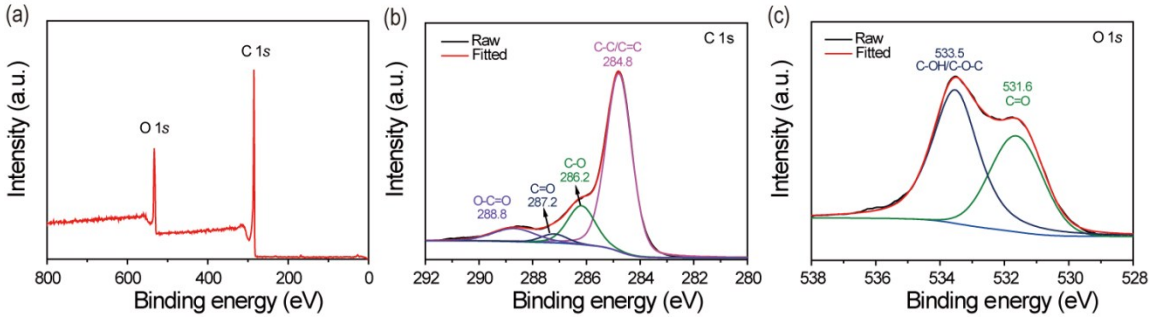

Fig. S4. (a) Survey XPS spectra of pure crumpled graphene, and corresponding (b) high-resolution XPS spectra of C, O.

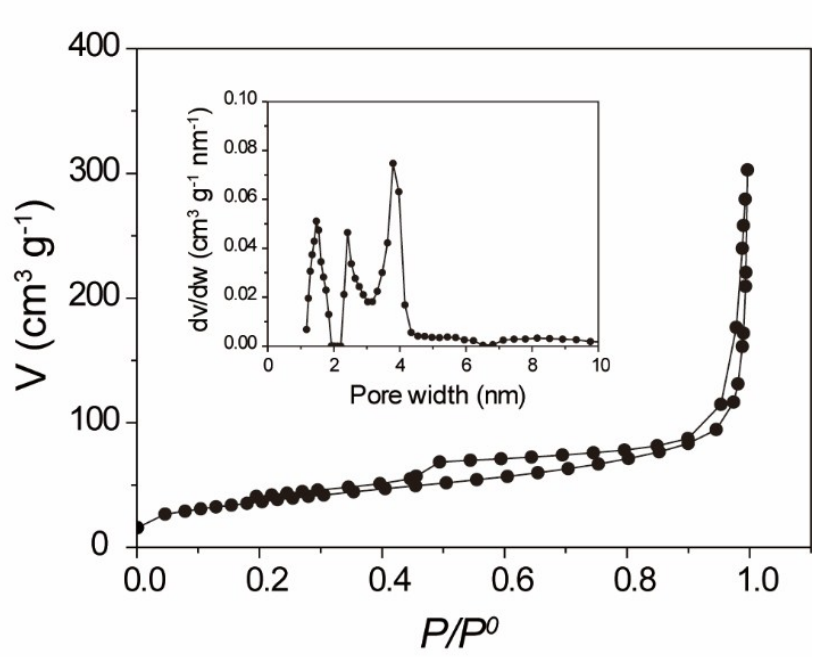

Fig. S5. N_2 isotherm curves and corresponding pore size distribution of pure crumped graphene.

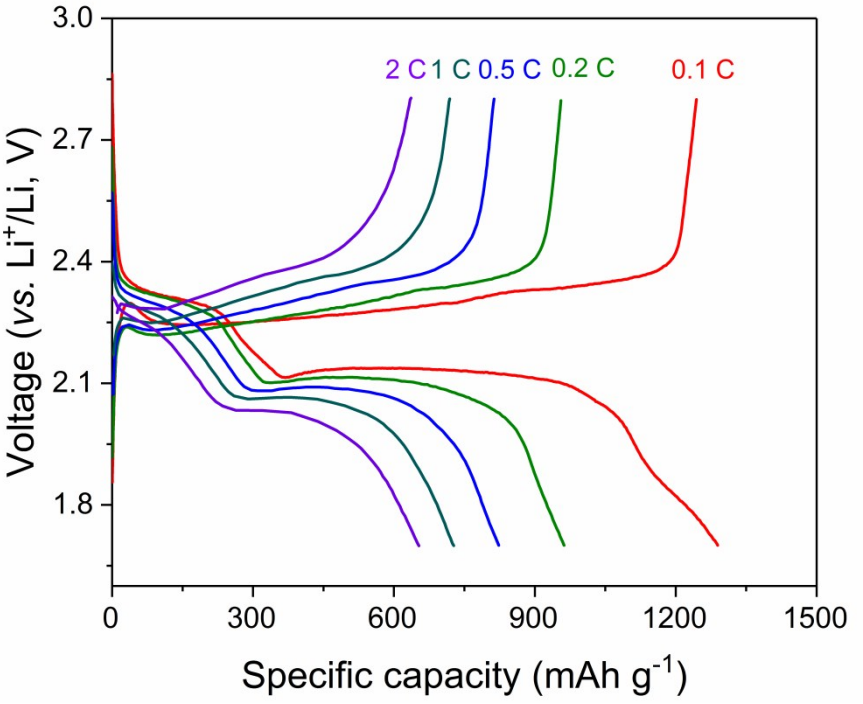

Fig. S6. Galvanostatic charge-discharge profiles of Li-S battery with S@crGO as cathode.

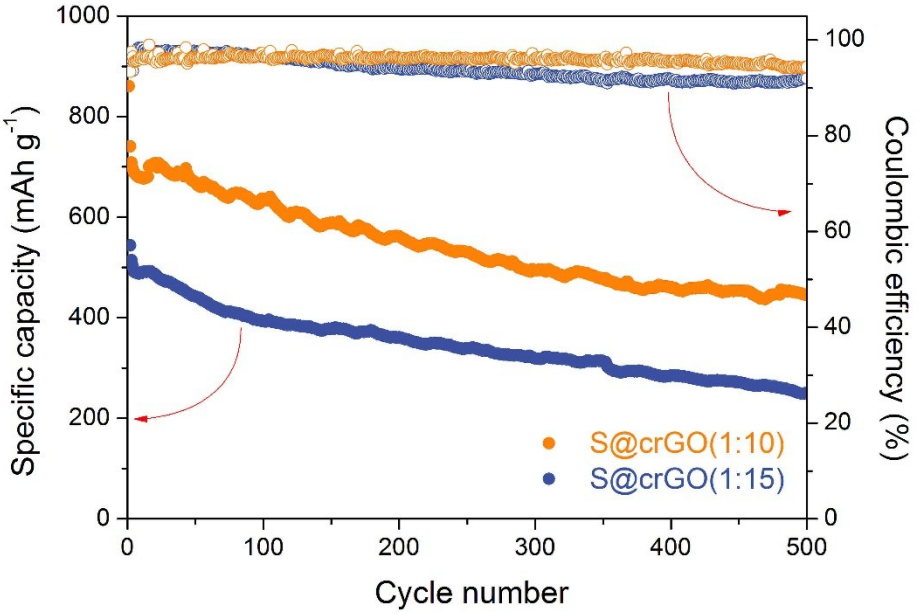

Fig. S7. Cycle performance of S@crGO(1:10) and S@crGO(1:15) at the rate of 0.5 C.