

Supporting Information

Cationic Polymer-Grafted Graphene Oxide/CNT Cathode Coating Material for Lithium Sulfur Batteries

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Samples	Carbon (wt%)	Hydrogen (wt%)	Oxygen (wt%)	Nitrogen (wt%)
GO	50.429	3.4172	46.025	0.1285
CPGO	52.527	4.2629	39.961	3.2487

Table S1. Elemental analysis results of GO and CPGO.

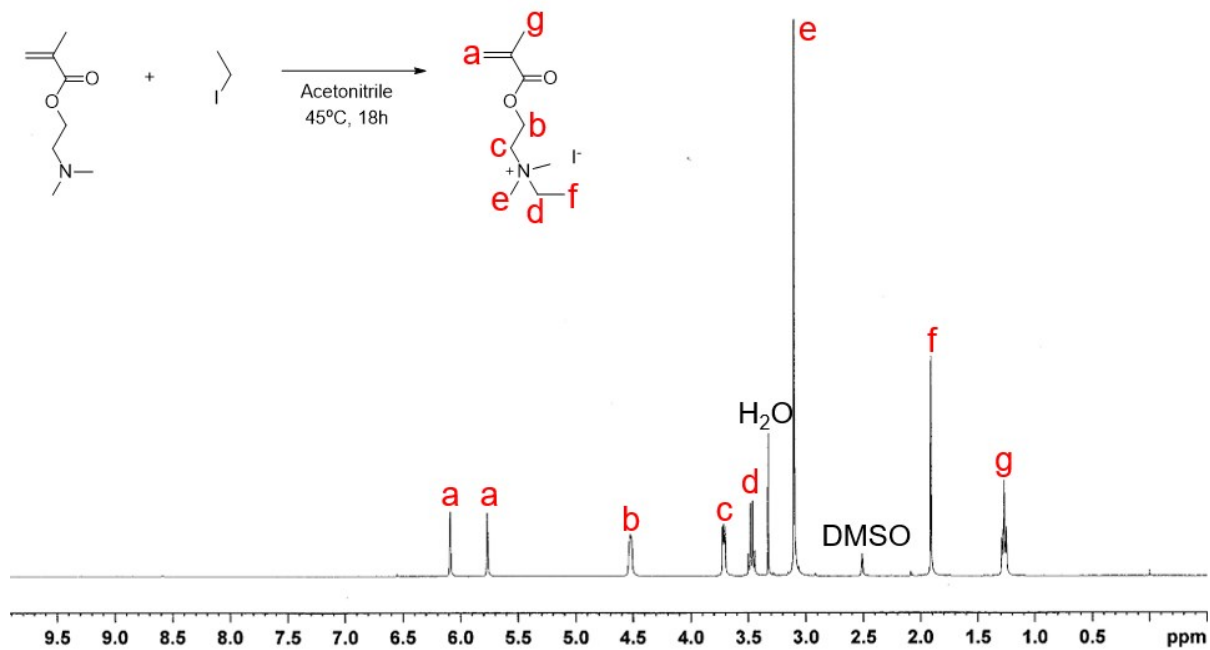


Figure S1. Synthetic scheme and ¹H NMR spectrum of QDMAEMA.

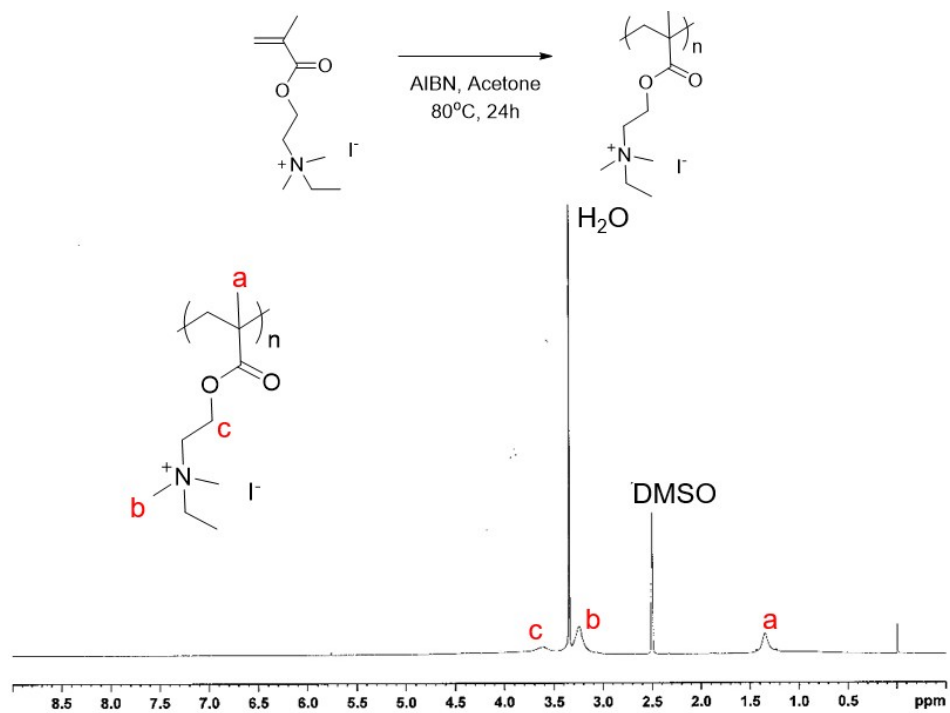


Figure S2. Synthetic scheme and ^1H NMR spectrum of PQDMAEMA.

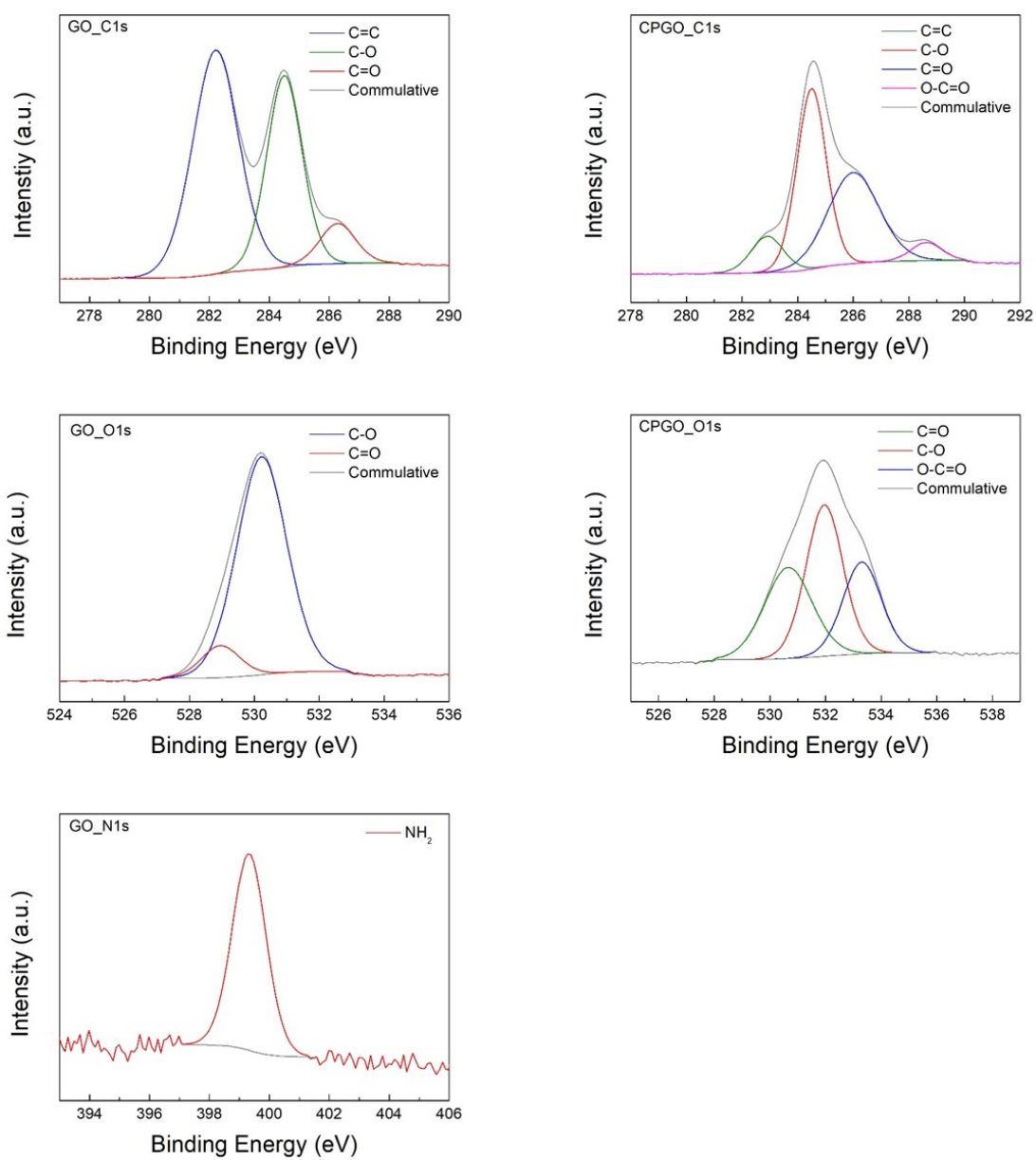


Figure S3. C1s and O1s XPS spectra of GO and CPGO, N1s XPS spectrum of GO.

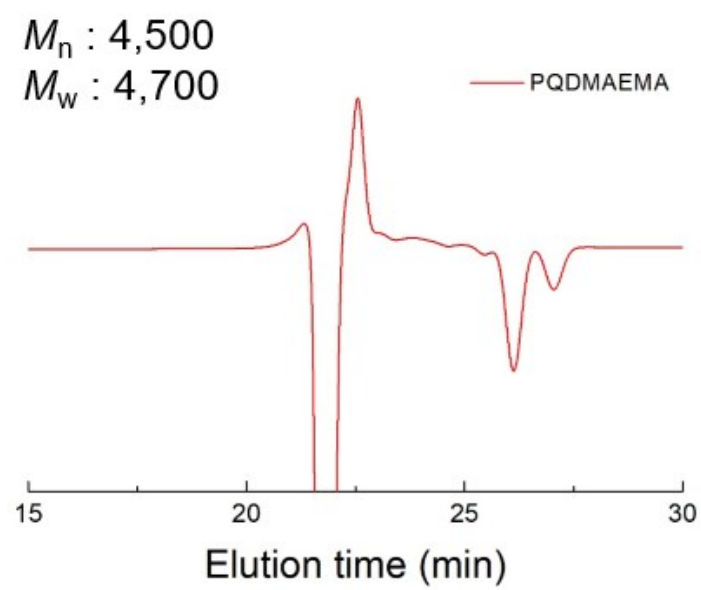


Figure S4. GPC profiles of the grafted cationic polymer (PQDMAEMA) hydrolyzed from CPGO.

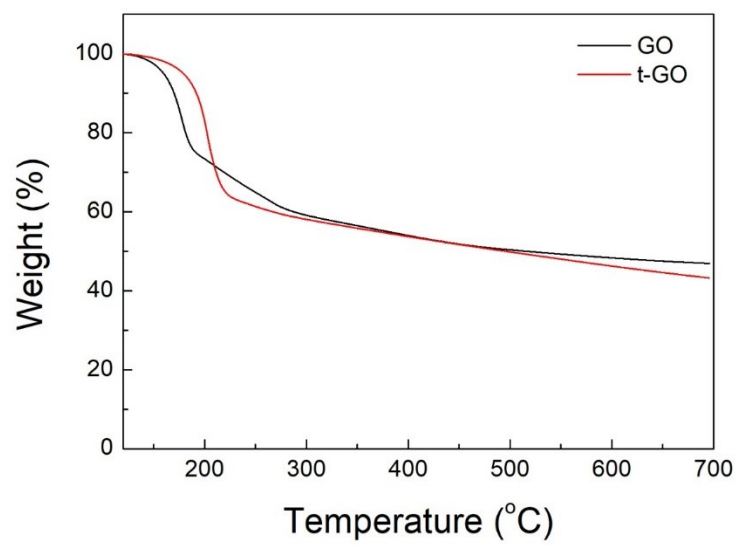


Figure S5. TGA profiles of GO and t-GO.

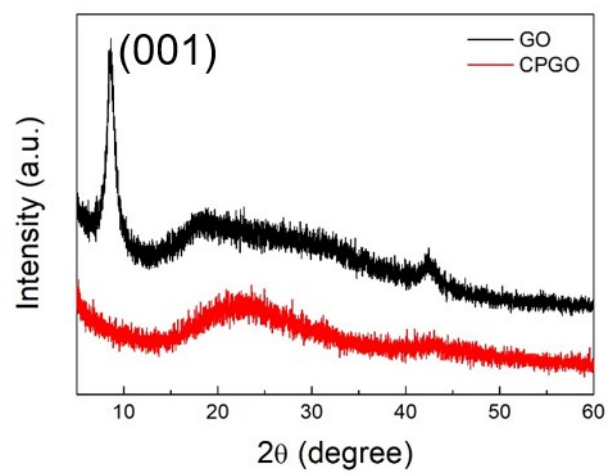


Figure S6. XRD patterns of GO and CPGO.

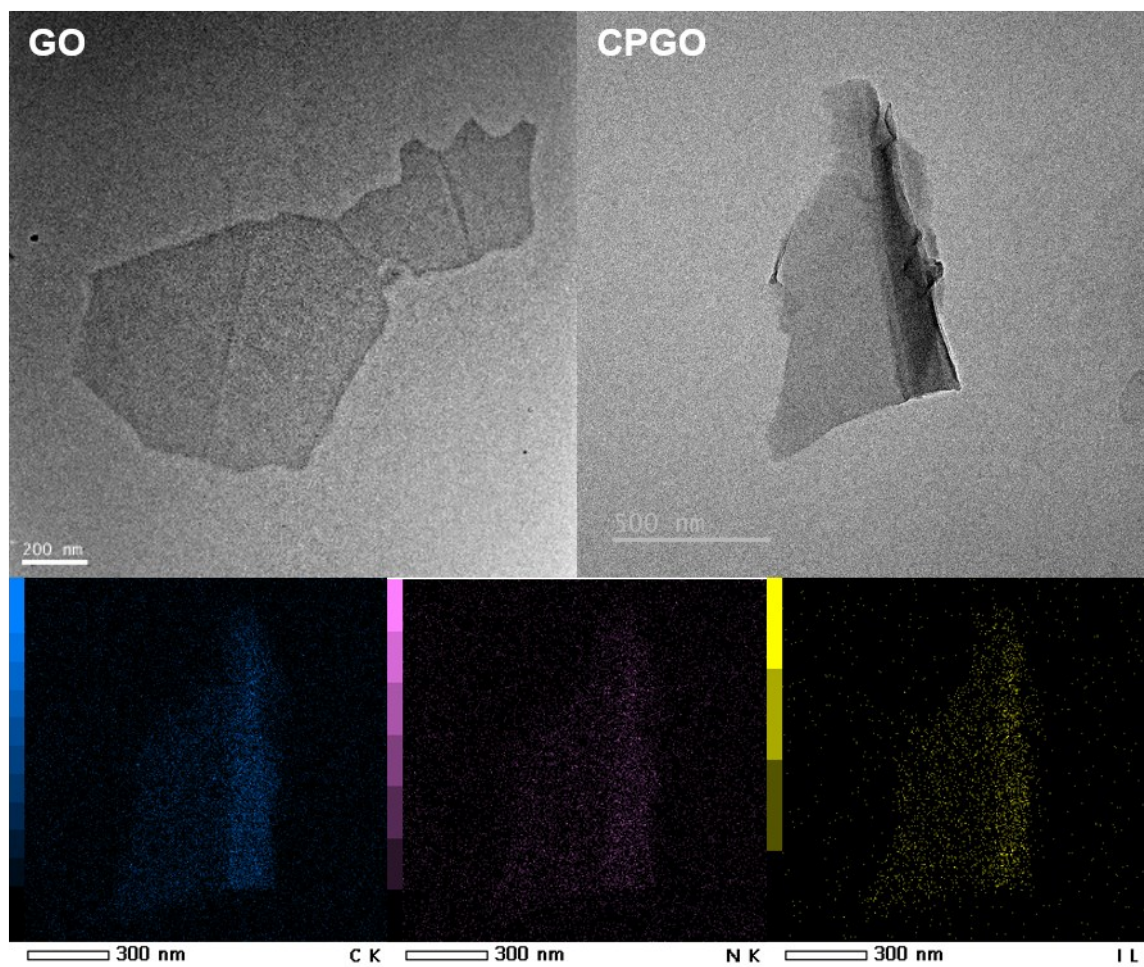


Figure S7. TEM image of GO and TEM image of CPGO with EDS mapping.

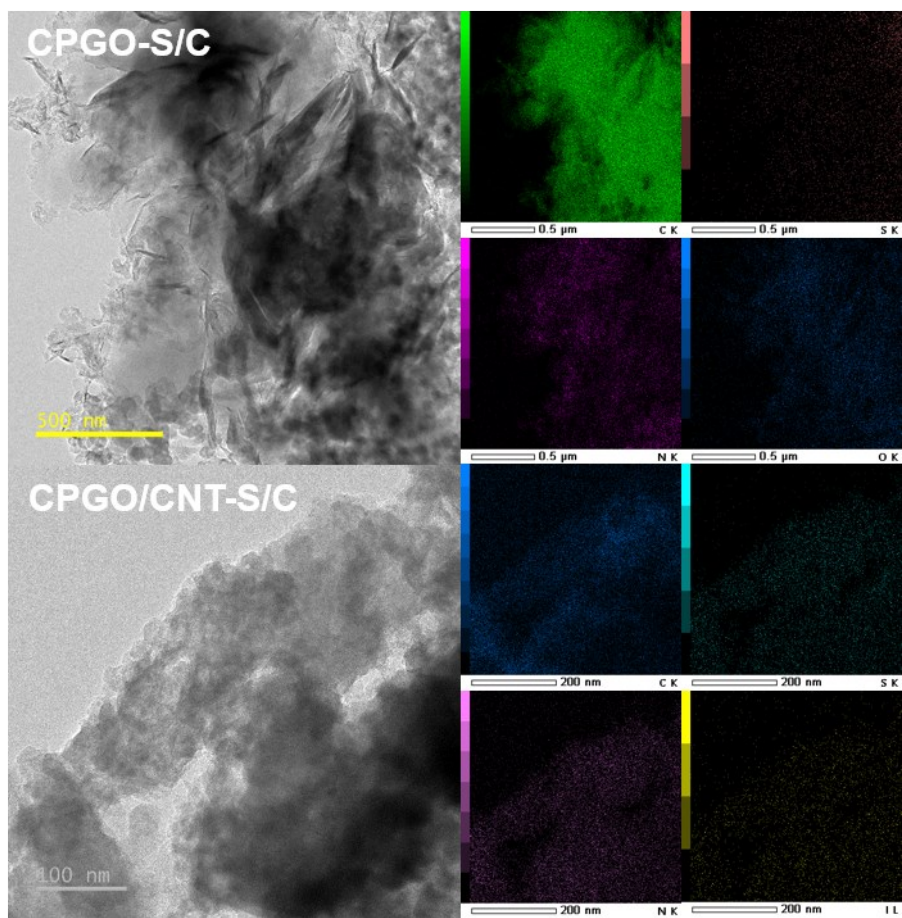


Figure S8. TEM images with EDS mapping results of CPGO-S/C and CPGO/CNT-S/C.

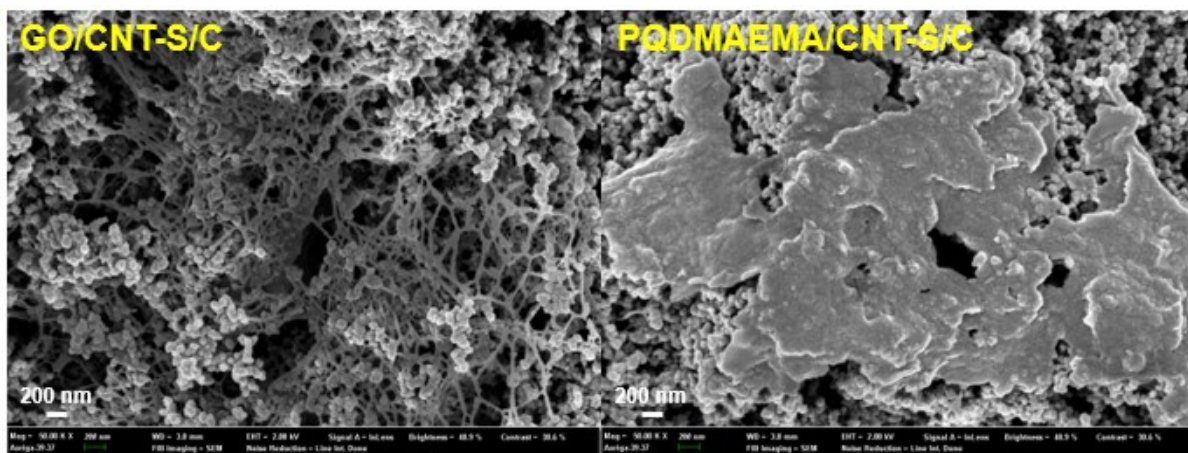


Figure S9. SEM images of cathodes prepared with GO/CNT-S/C and PQDMAEMA/CNT-S/C.

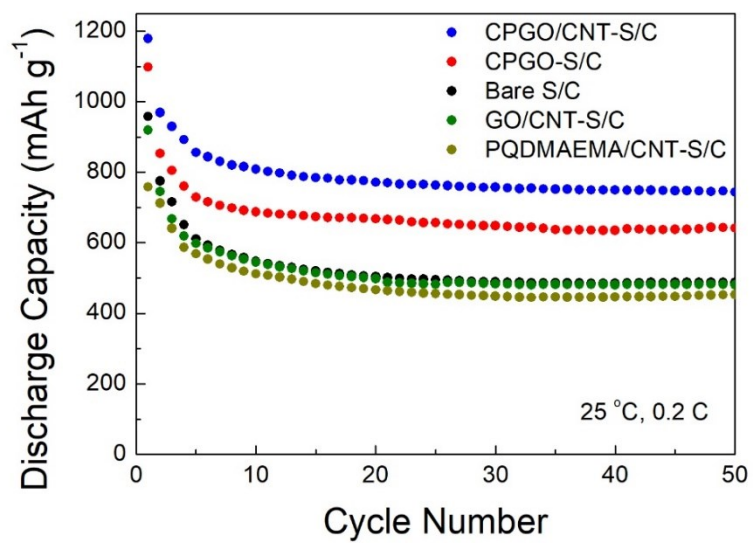


Figure S10. Cycle performance of lithium sulfur batteries assembled with bare S/C, CPGO-S/C, CPGO/CNT-S/C, GO/CNT-S/C, and PQDMAEMA/CNT-S/C cathodes.

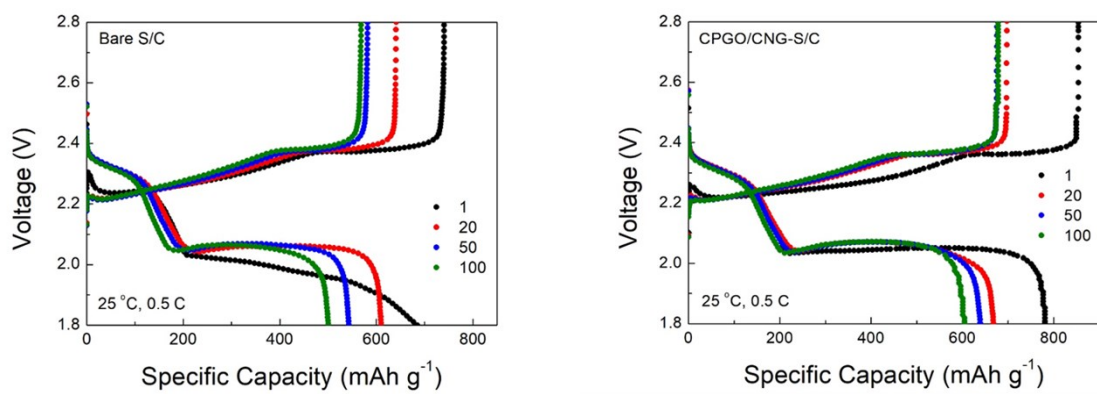


Figure S11. Charge-discharge curves of the cells with bare S/C and CPGO/CNT-S/C cathode at 0.5 C.

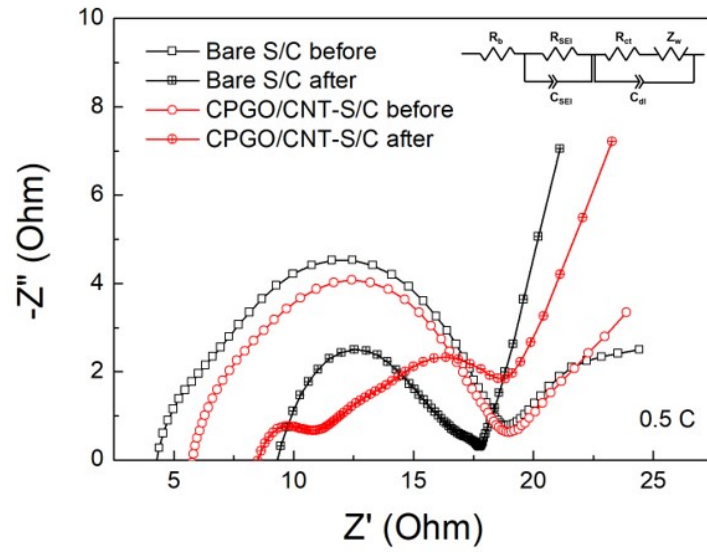


Figure S12. EIS spectra of the cells with bare S/C or CPGO/CNT-S/C cathodes before and after 120 cycles cycled at 0.5 C.