

Sandwich-Type Nitrogen and Sulfur Codoped Graphene-Backboned Porous Carbon Coated Separator for High Performance Lithium-Sulfur Batteries

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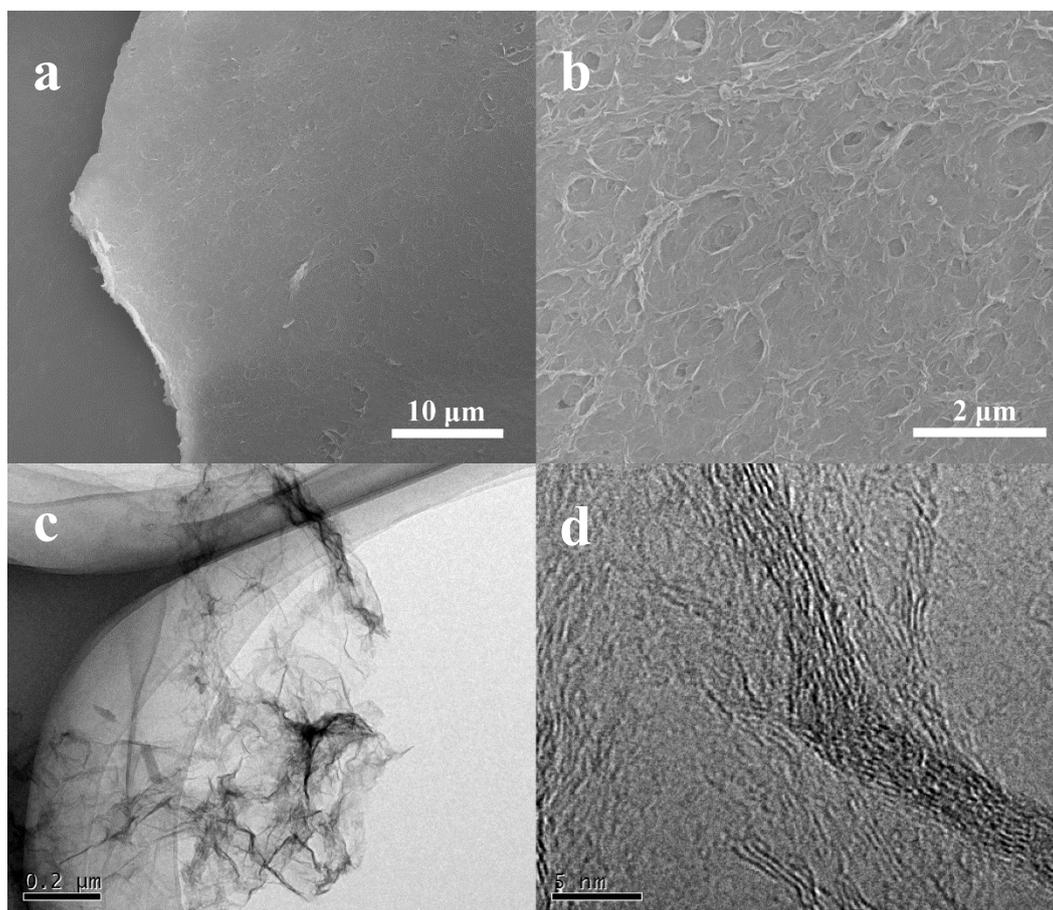


Figure S1. SEM images of pure G (a-b), TEM and HRTEM images of pure G (c-d).

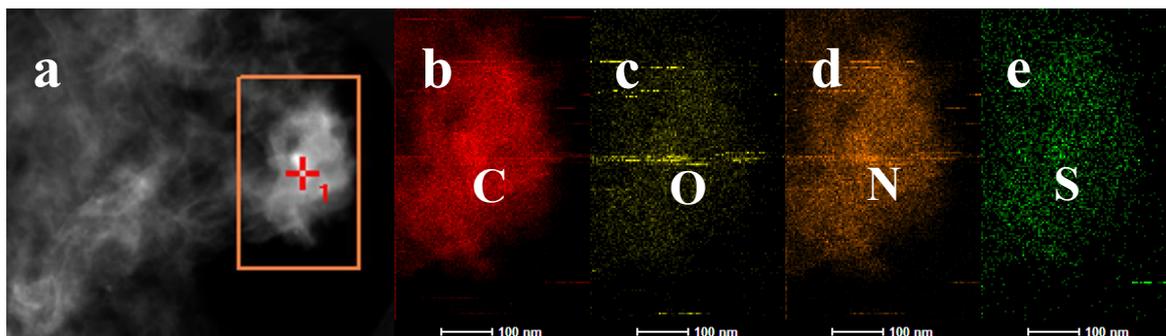


Figure S2. STEM image of NSGPC (a), corresponding elemental maps of carbon (b), oxygen (c), nitrogen (d), and sulfur (e).

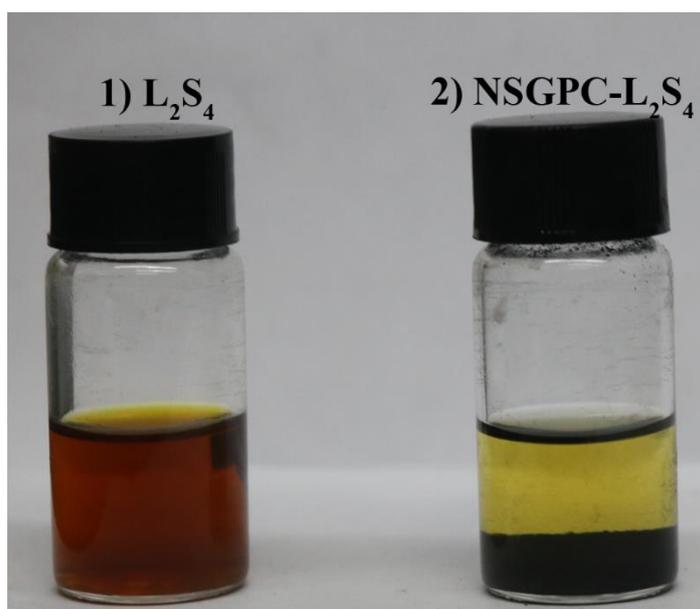


Figure S3. Digital photograph of Li_2S_4 solution and after adding NSGPC.

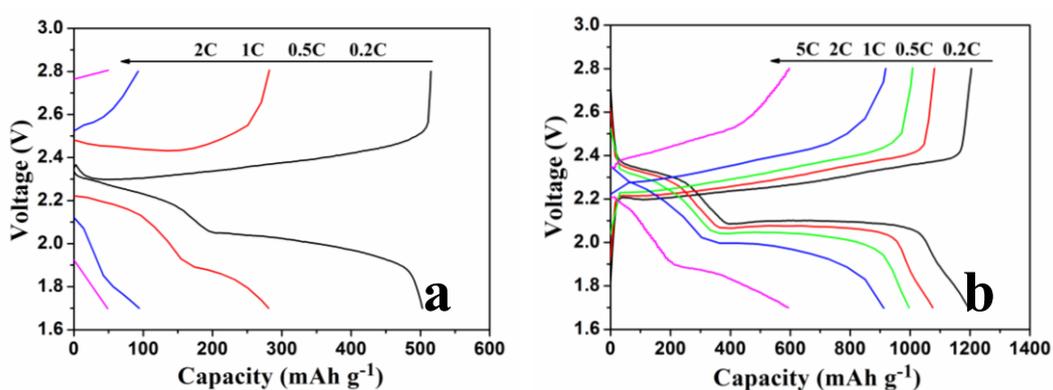


Figure S4. Discharge/charge voltage profiles of the Li-S batteries with (a) PP and (b) NSGPC-coated separators at various current rates. The sulfur mass loading of the simple cathodes was about 1.3 mg cm^{-2} .

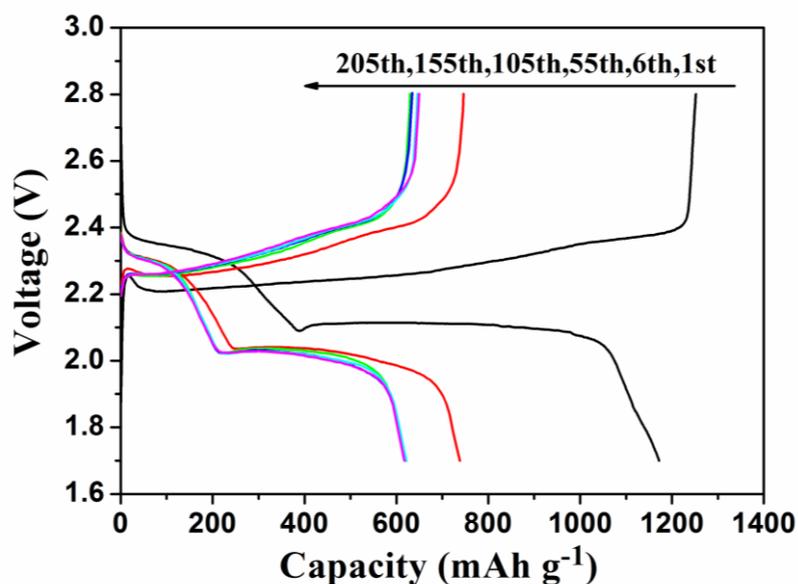


Figure S5. Discharge/charge voltage profiles of the Li-S batteries with NSGPC-coated separator at various cycles. The sulfur mass loading of the simple cathodes was about 3.4 mg cm^{-2} .

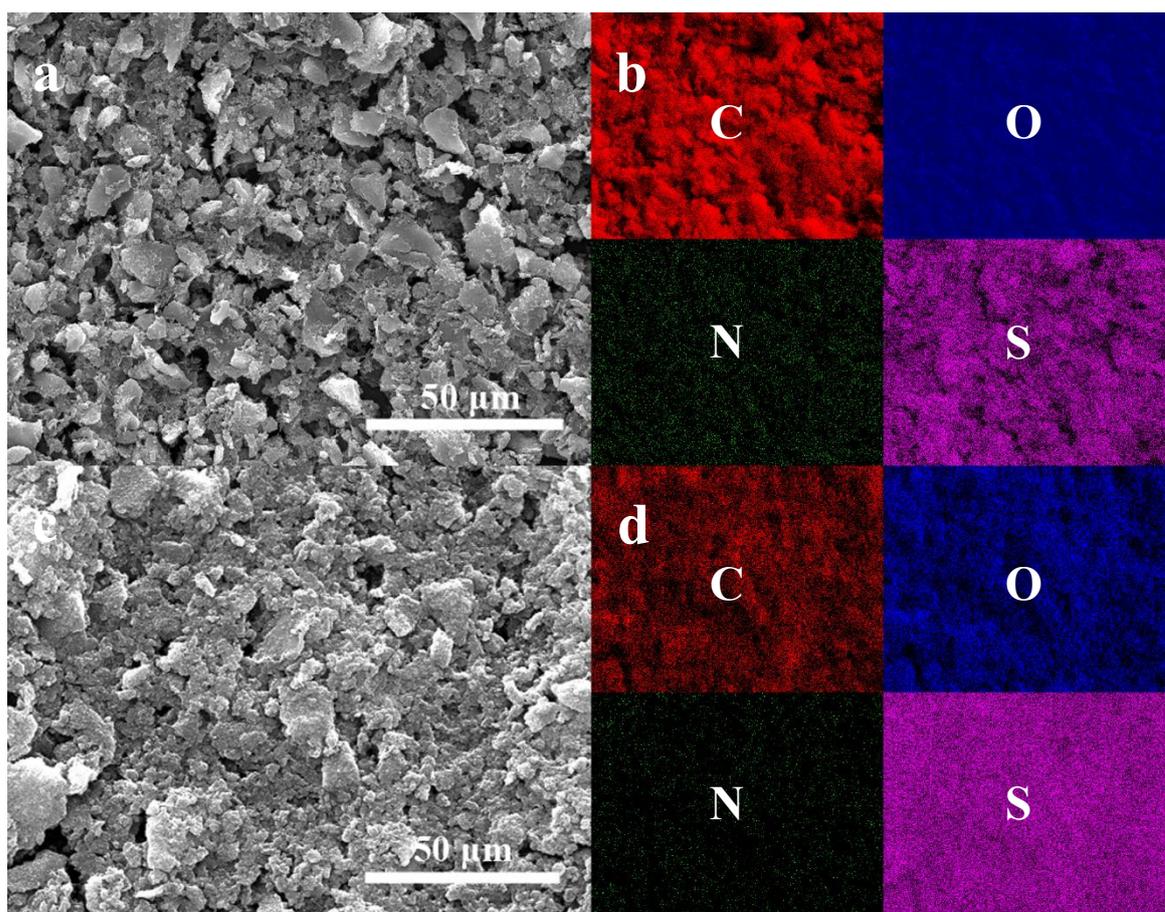


Figure S6. SEM images and corresponding elemental mappings of NSGPC-coated separator (a,b) before cycles and (c,d) after 100 cycles at 0.2 C .

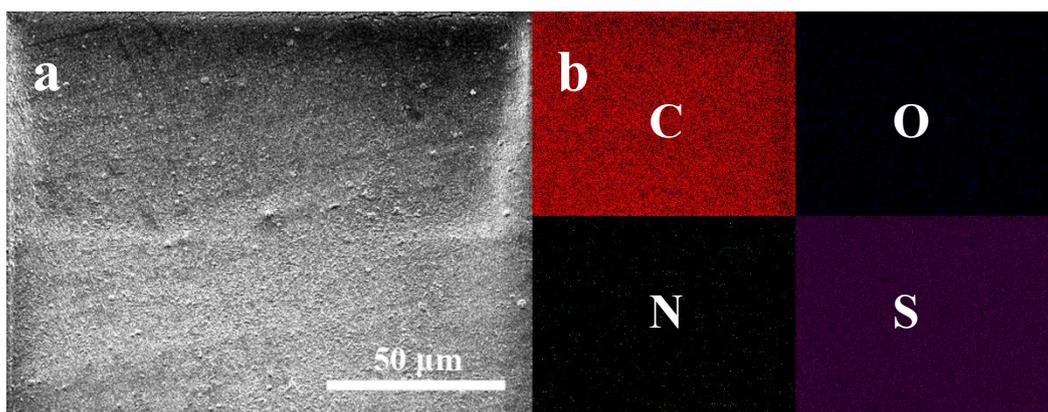


Figure S7. SEM image (a) and corresponding elemental mappings (b) of the back of NSGPC-coated separator (facing to the Li anode) after 100 cycles at 0.2 C.

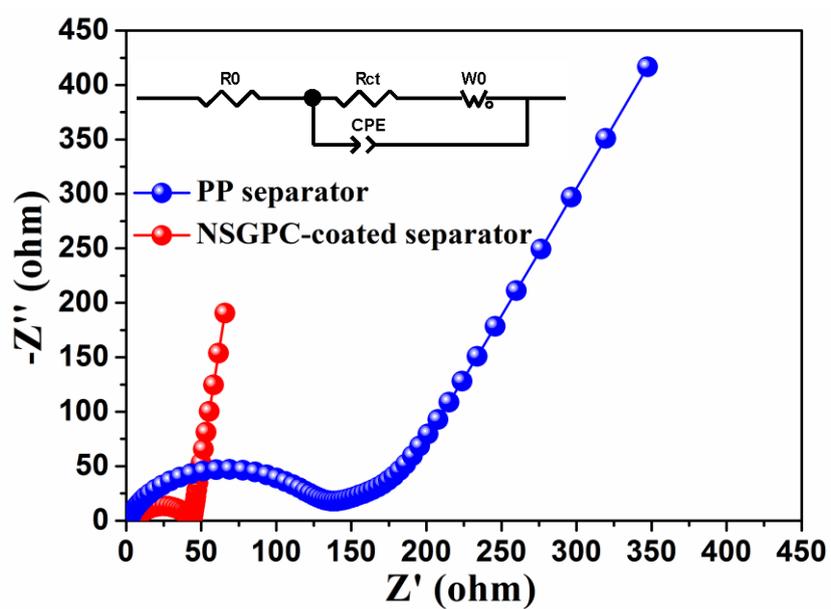


Figure S8. EIS curves of the fresh Li-S batteries with PP and NSGPC-coated separators, and the inset is equivalent circuit model.