

Supporting information for

# MOF-Derived $\text{Co}_3\text{O}_4$ Polyhedrons as Efficient Polysulfides Barrier on Polyimide Separators for High Temperature Lithium–sulfur Batteries

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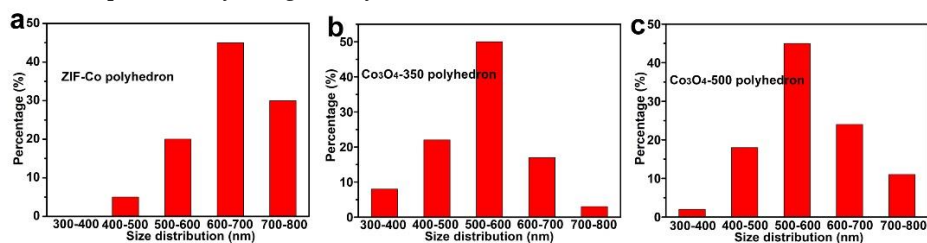
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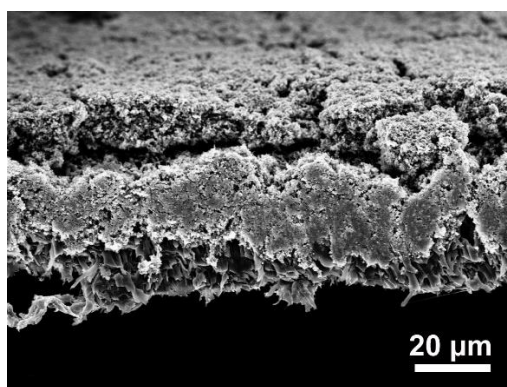
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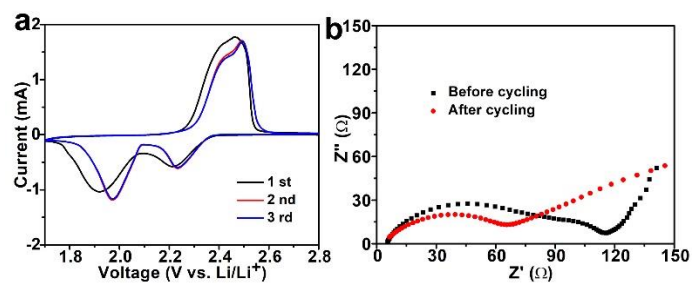
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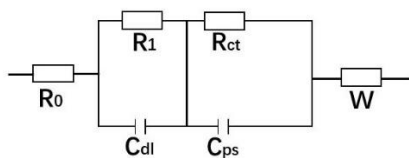
**Figure S1.** The size distribution of the ZIF-Co polyhedron (a), the  $\text{Co}_3\text{O}_4$ -350 polyhedron (b), and the  $\text{Co}_3\text{O}_4$ -500 polyhedron (c).



**Figure S2.** Typical cross-section SEM image of the  $\text{Co}_3\text{O}_4$ -350/PI/LLZO separator.



**Figure S3.** Typical CV curves and Nyquist plots of Li-S cell using the pristine PI separator.



**Figure S4.** The equivalent electric circuit from the EIS fitting results.