

Electronic Supplementary Material

Polydopamine-assisted in-situ formation of dense MOF layer on polyolefin separator for synergistic enhancement of lithium-sulfur battery

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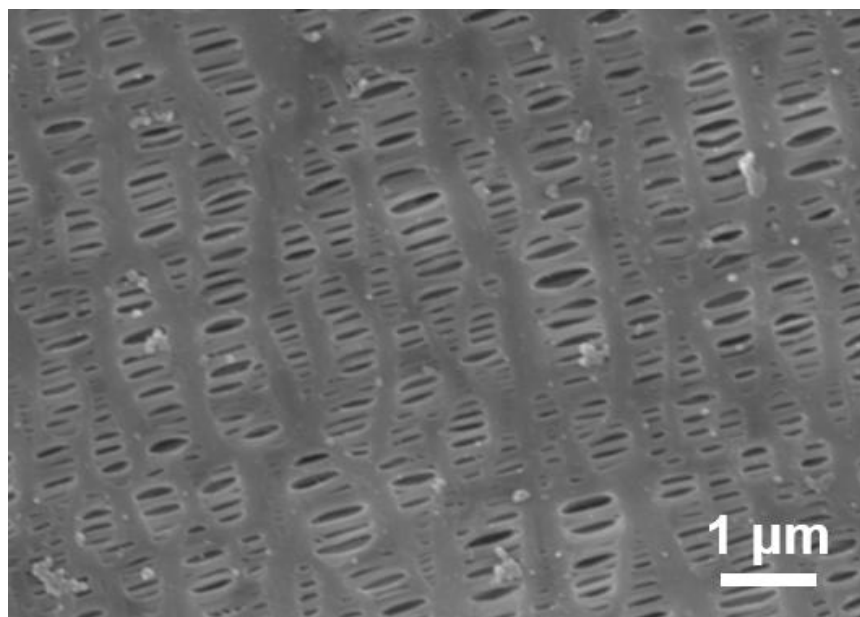


Figure S1 SEM image of ZIF-8/PP.

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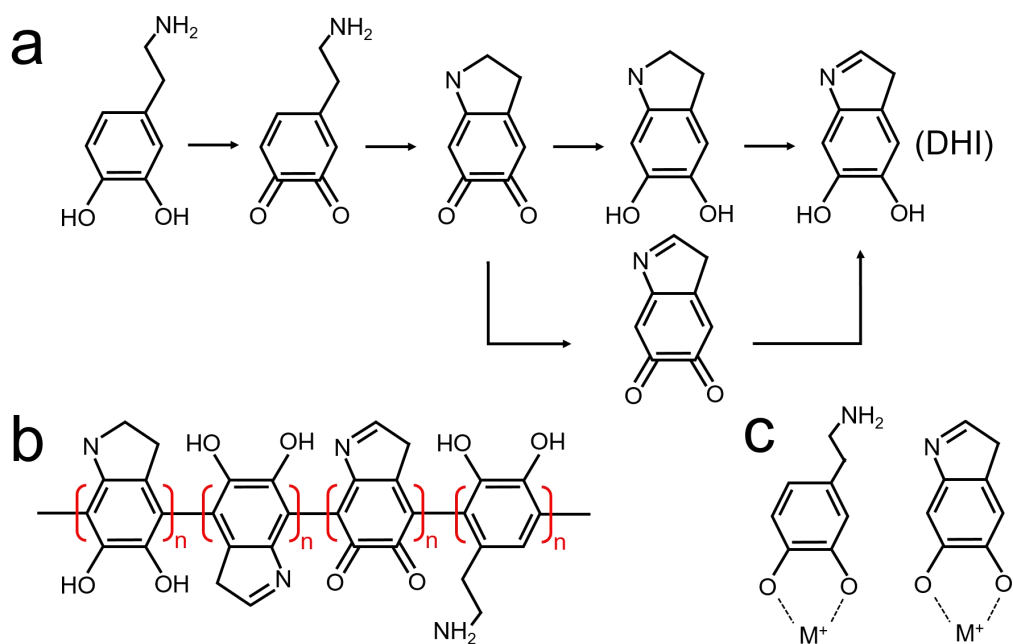


Figure S2 The chemical reaction mechanism of interfacial polymerization of dopamine. (a) DA monomer polymerization process; (b) structural proposal of PDA; (c) the combination of PDA and metal ions.

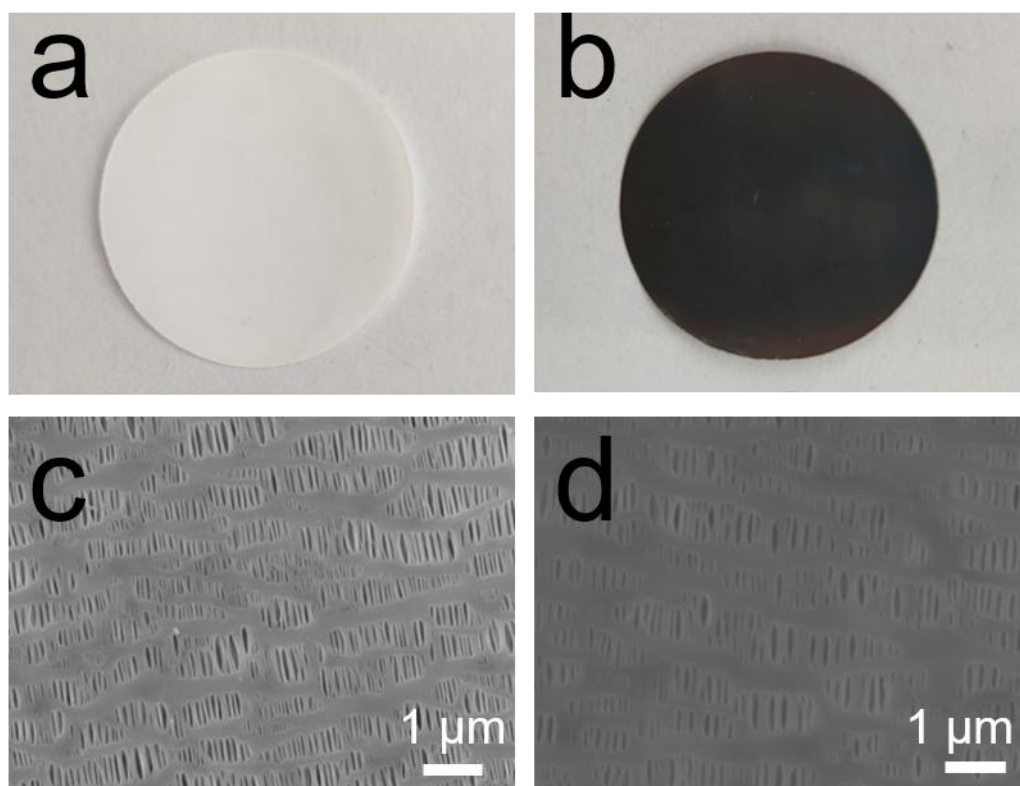


Figure S3 The optical photos of (a) PP and (b) PDA@PP; SEM images of (c) PP and (d) PDA@PP.

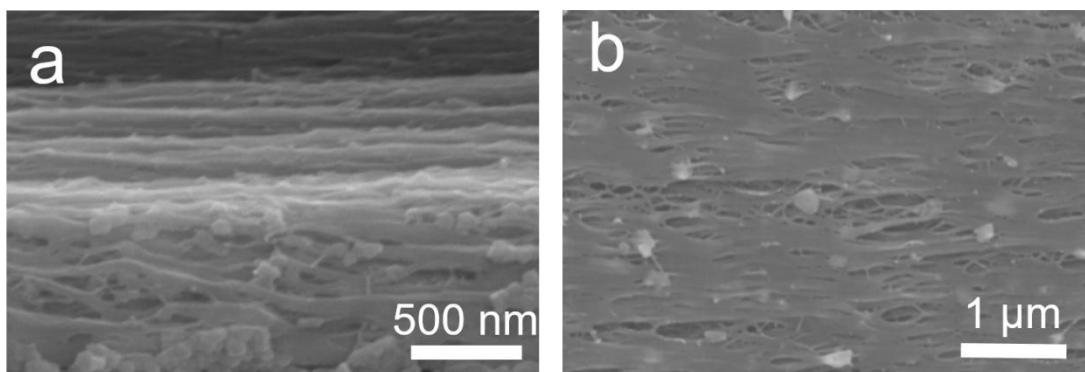


Figure S4 SEM images of the cross-sectional of ZIF-8/PDA@PP separator: (a) near the surface; (b) center of the separator.

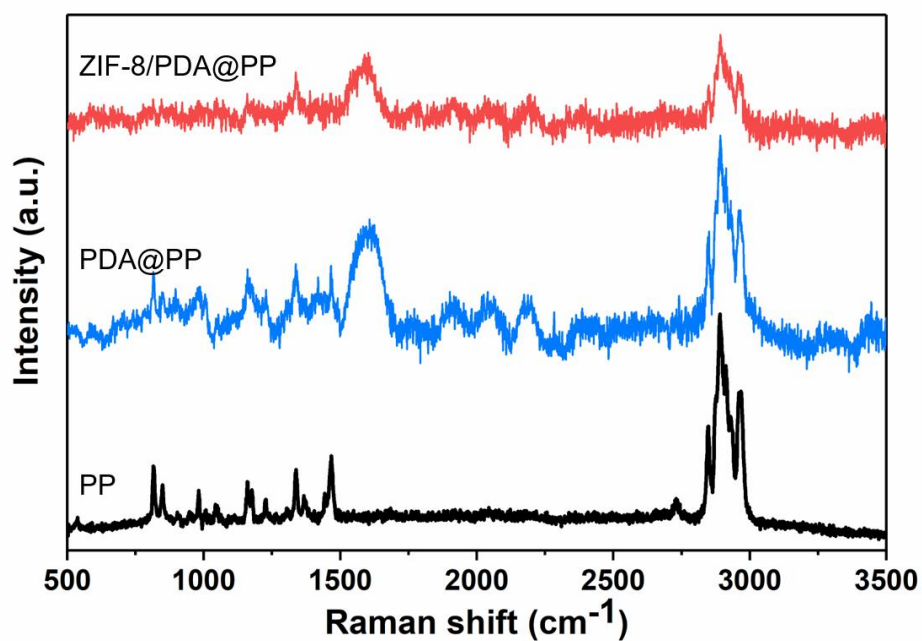


Figure S5 Raman spectra of PP, PDA@PP and ZIF-8/PDA@PP separators.

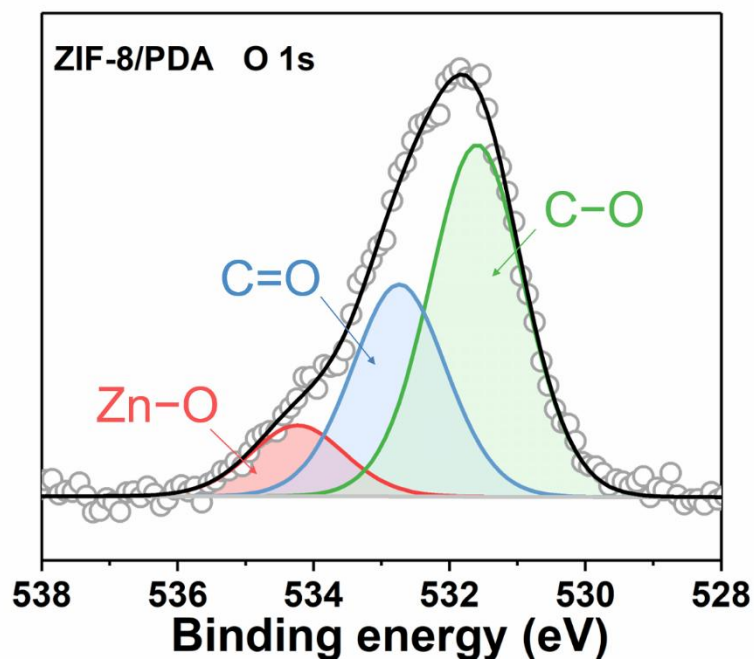


Figure S6 The high-resolution scan of O 1s of ZIF-8/PDA.

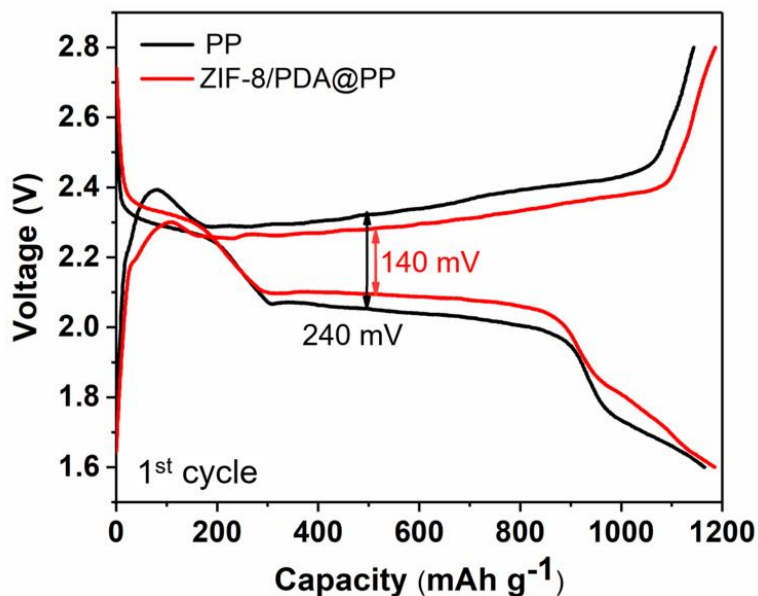


Figure S7 The constant current charge/discharge voltage curves of PP and ZIF-8/PDA@PP separators at 0.2 C.

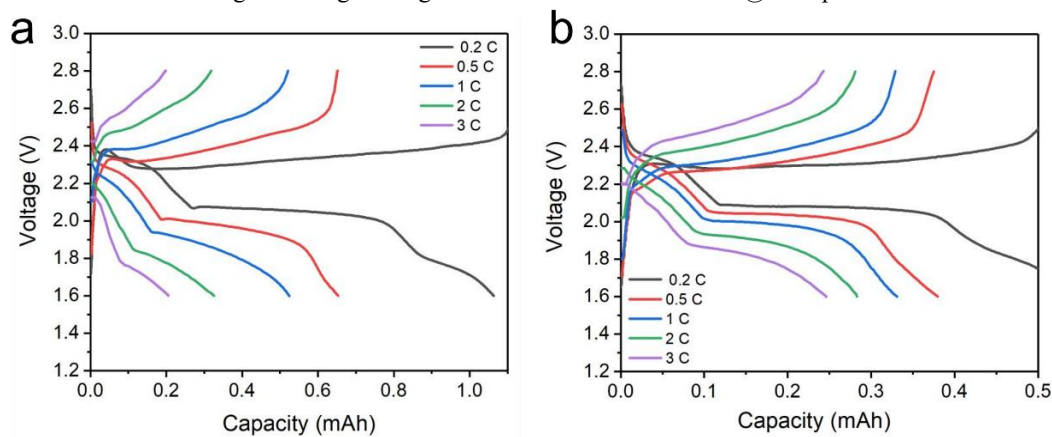


Figure S8 The constant current charge/discharge voltage curves of different separators at different rates: (a) PP separator; (b) ZIF-8/PDA@PP separator.

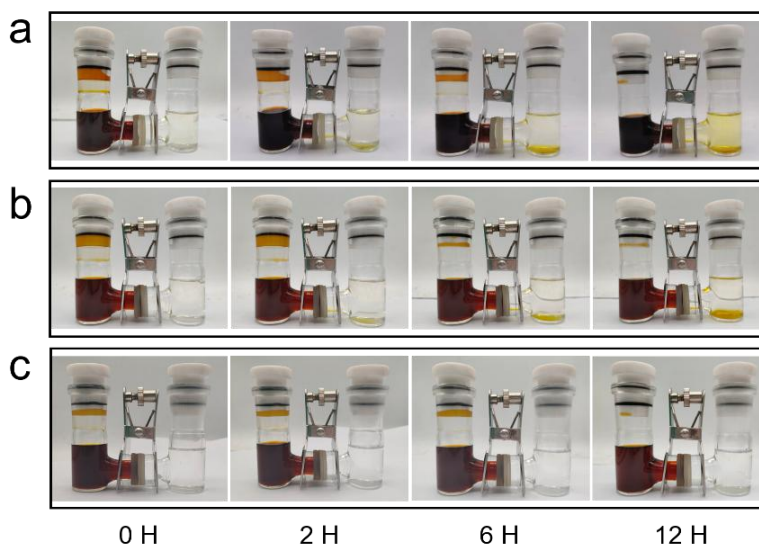


Figure S9 Visualization experiment: (a) PP separator; (b) PDA@PP separator; (c) ZIF-8/PDA@PP separator.

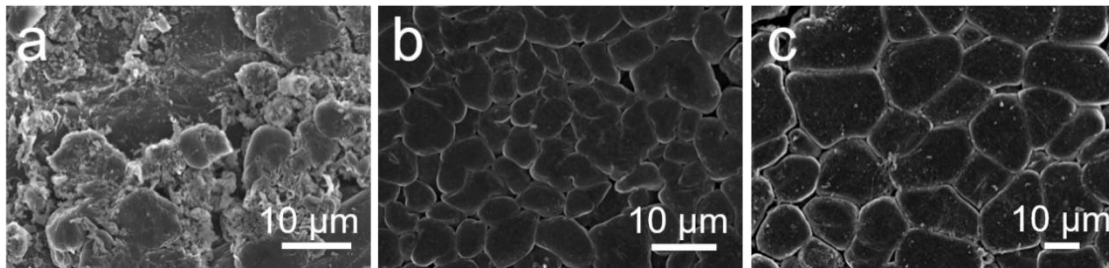


Figure S10 The SEM images of lithium deposition after the cycle: (a) PP separator; (b) PDA@PP separator; (c) ZIF-8/PDA@PP separator.