

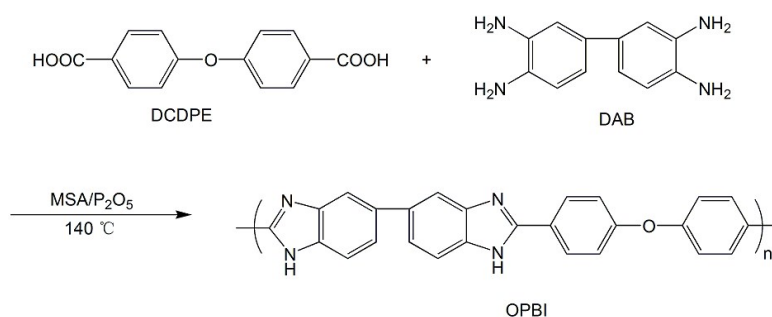
Supporting Information

A Facile Approach for Preparation of Porous Polybenzimidazole Membranes as a Promising Separator for Lithium Ion Batteries

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Scheme S1 The process for synthesis of OPBI polymer.

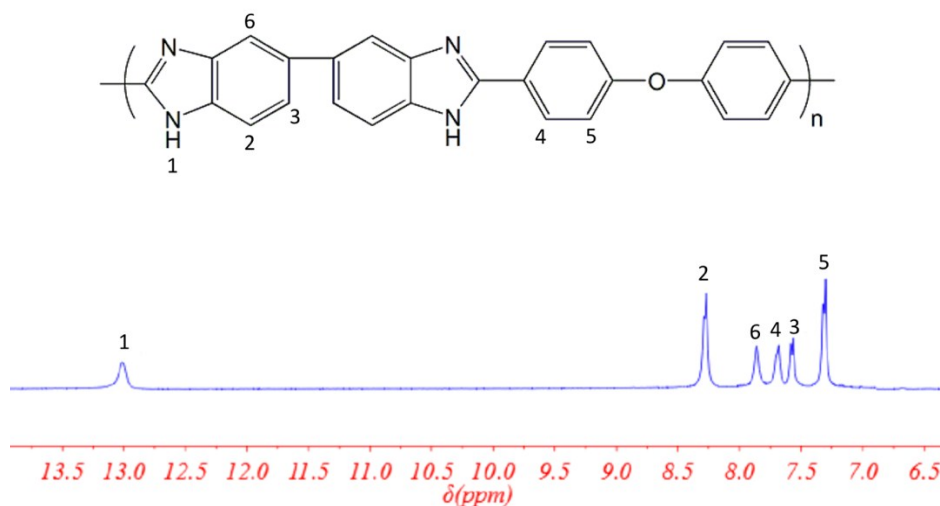


Fig. S1 The ¹H NMR of the synthesized OPBI polymer.

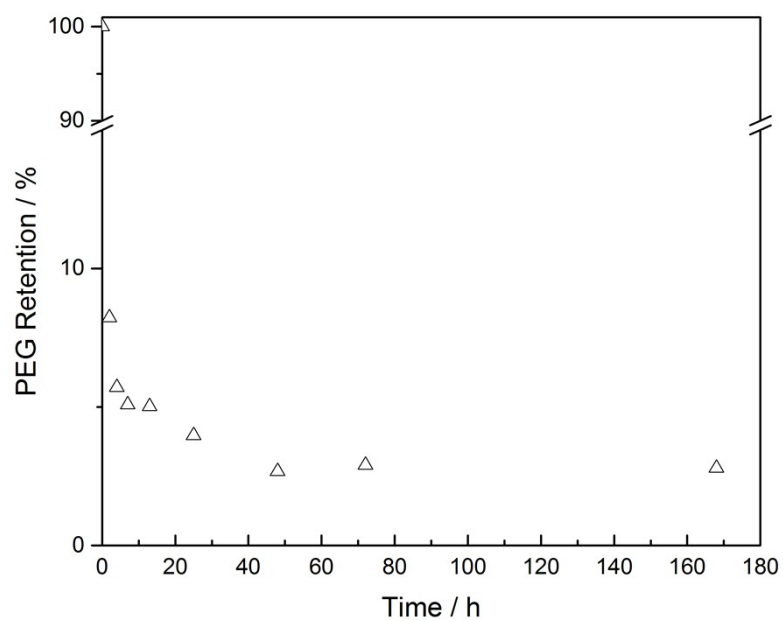


Fig. S2 PEG retention percentage of OPBI/PEG1000 blend membrane(weight ratio: 1:5) at different water washed time. (60 °C, Change water by every 6h.)

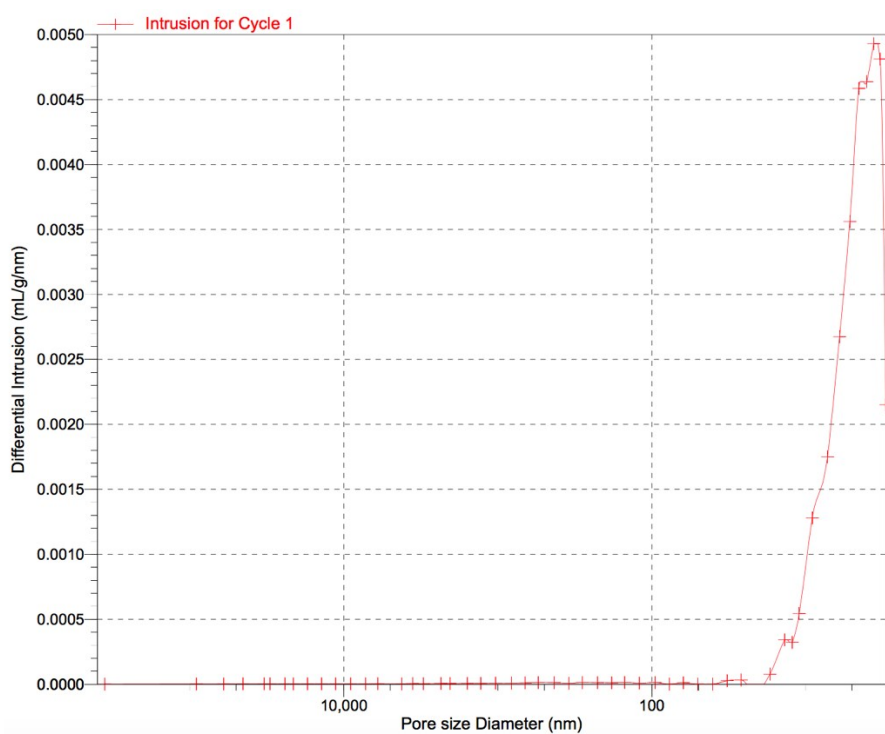


Fig. S3 The intrusive mercury measurement result (Differential Intrusion vs Pore size) of M-1

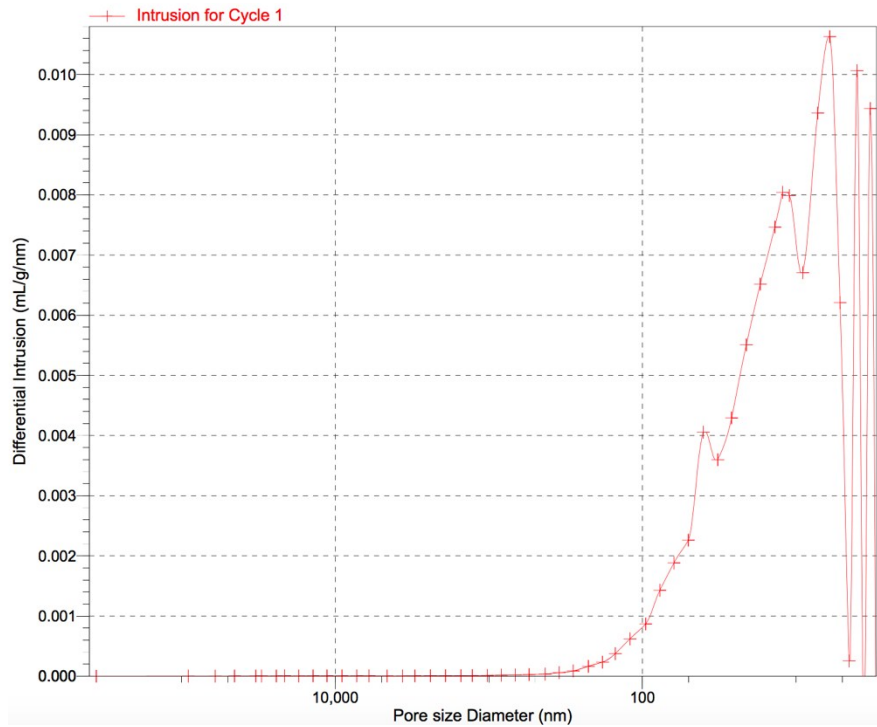


Fig. S4 The intrusive mercury measurement result (Differential Intrusion vs Pore size) of M-2

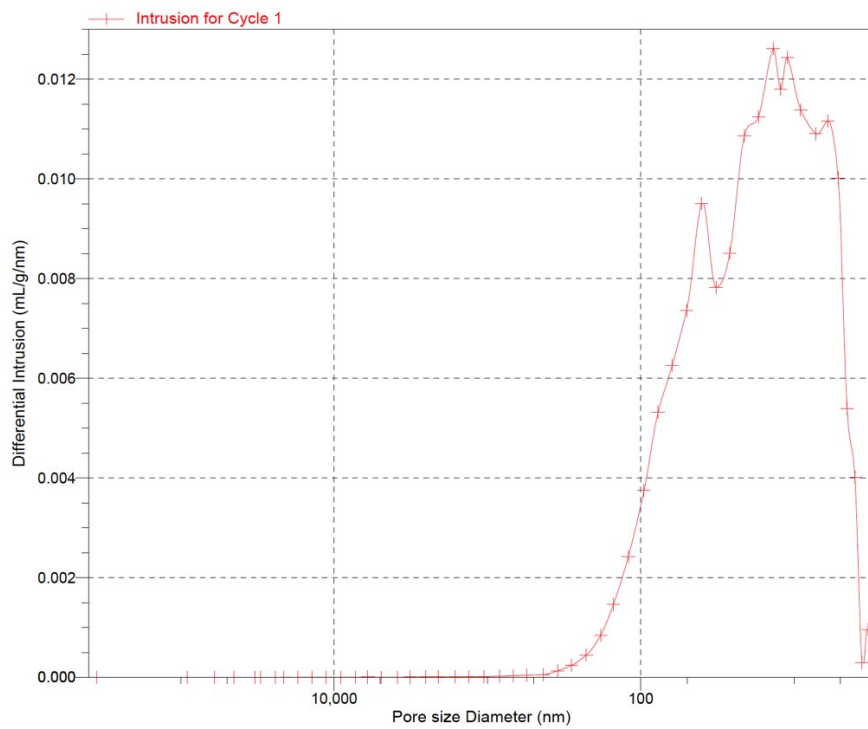


Fig. S5 The intrusive mercury measurement result (Differential Intrusion vs Pore size) of M-3

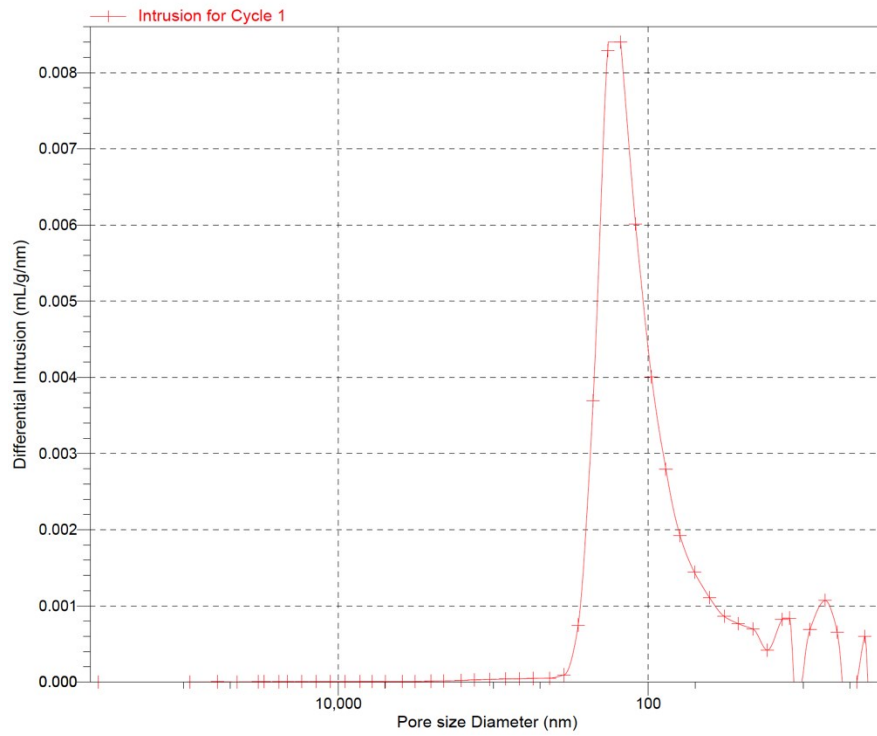


Fig. S6 The intrusive mercury measurement result (Differential Intrusion vs Pore size) of M-4

Table S1 The intrusive mercury measurements results (average pore diameter and porosity) for M-3 and M-4

Membrane	Average Pore Diameter (4V/A)	Porosity
M-1	40.9 nm	47%
M-2	47.1 nm	60%
M-3	53.7 nm	67%
M-4	255.2 nm	72%

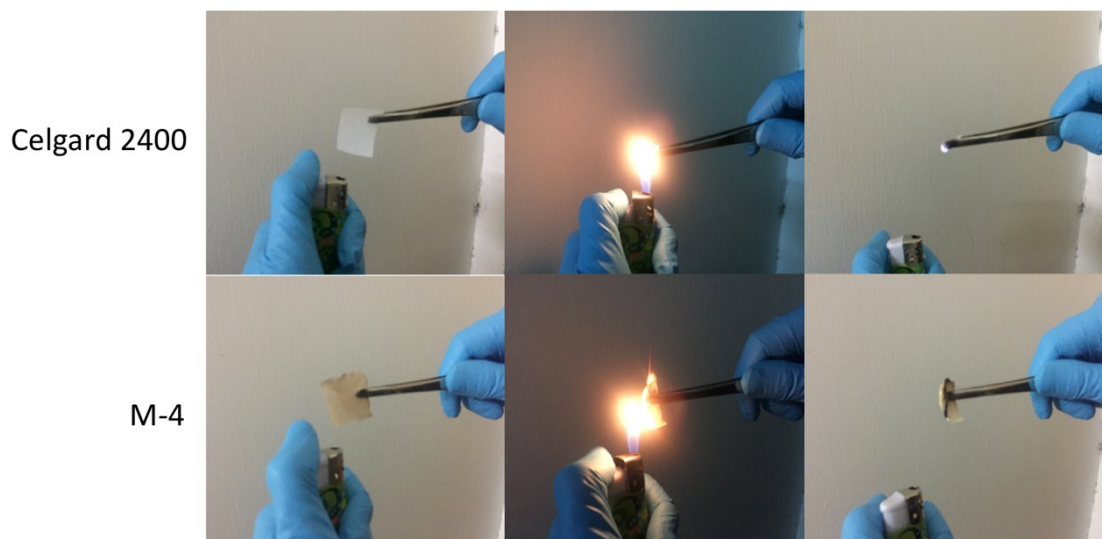


Fig. S7 The combustion test of Celgard2400 and M-4

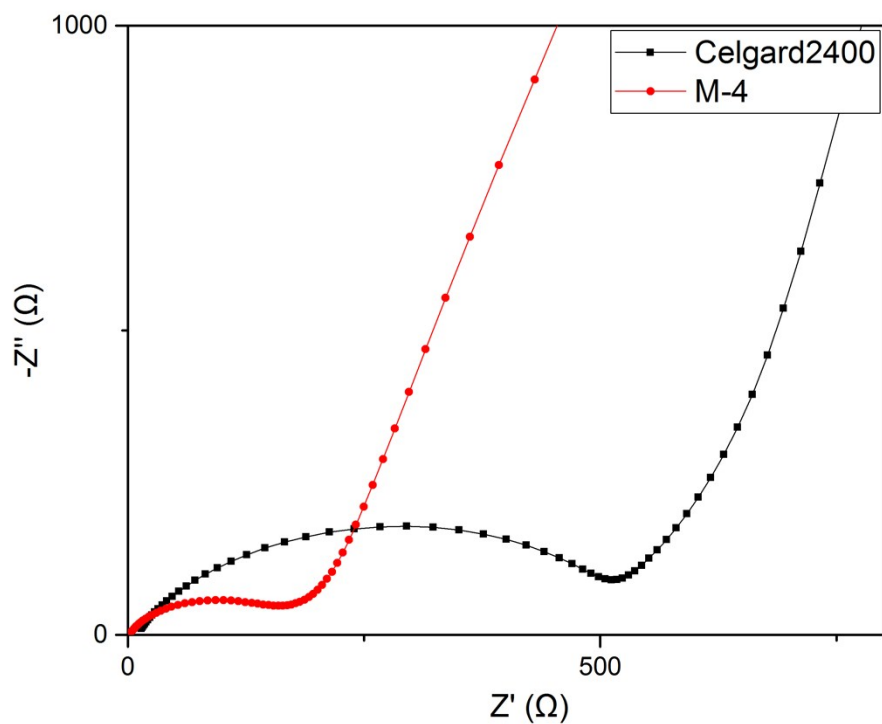


Fig. S8 Electrochemical impedance spectra of Li/M-4 (27 μm)/Li and Li/Celgard2400 (25 μm)/Li symmetric cells at 25 °C.