

Supporting Information for

A novel modified PI Separator with enhanced Dendrite-Suppressed and Puncture Prevention and Better size stability for Room Temperature Sodium-Sulfur Batteries

Xiaoguang Jiao,^a Chao Yang,^a Kaixuan Ma,^a Caihong Feng,^a Qingze Jiao,^{a,b} and Yun Zhao*^a

a. Beijing Key Laboratory for Chemical Power Source and Green Catalysis, School of Chemistry and Chemical Engineering, Beijing Institute of Technology, 5 South Zhongguancun Street, Haidian District, Beijing 100081, China.

b. School of Materials and Environment, Beijing Institute of Technology, Jinfeng Road No. 6, Xiangzhou District, Zhuhai 519085, China.

E-mail: zhaoyun@bit.edu.cn

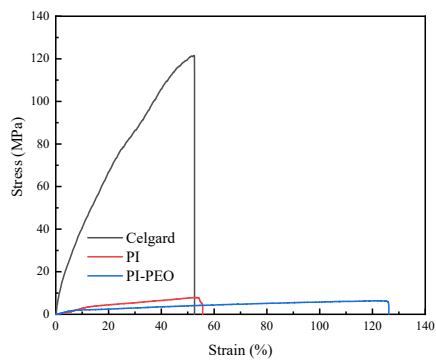


Fig. S1. Stress-strain curves of Celgard, PI and PI-PEO separators.

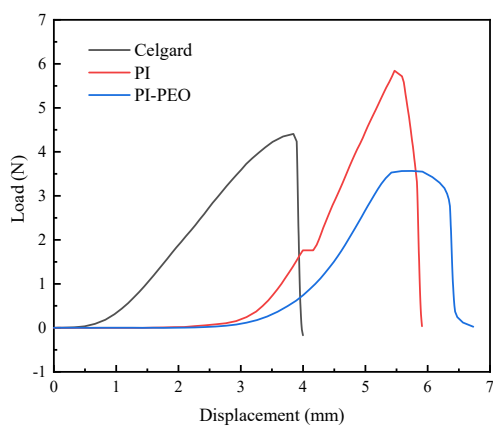


Fig. S2. Puncture experiment of Celgard, PI and PI-PEO separators.

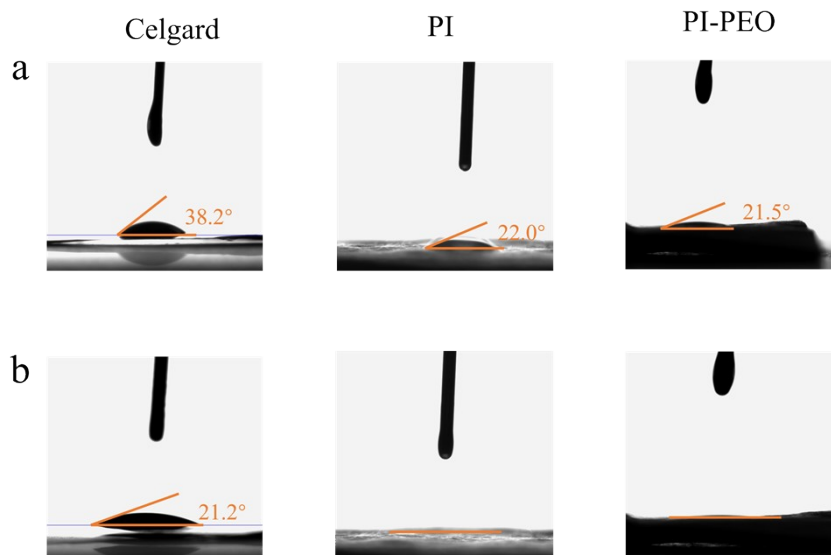


Fig. S3. (a) Contact angle between electrolyte and separators; (b) Contact angle between electrolyte and separators after 1 second.

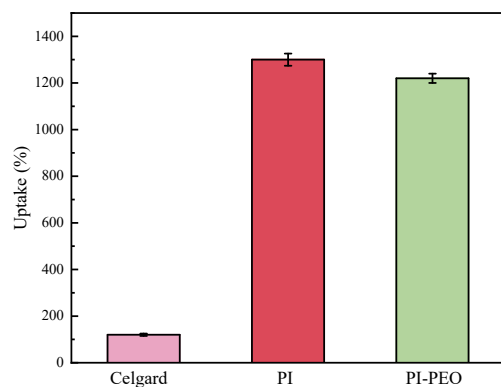


Fig. S4. Absorption rate of separators to electrolyte.

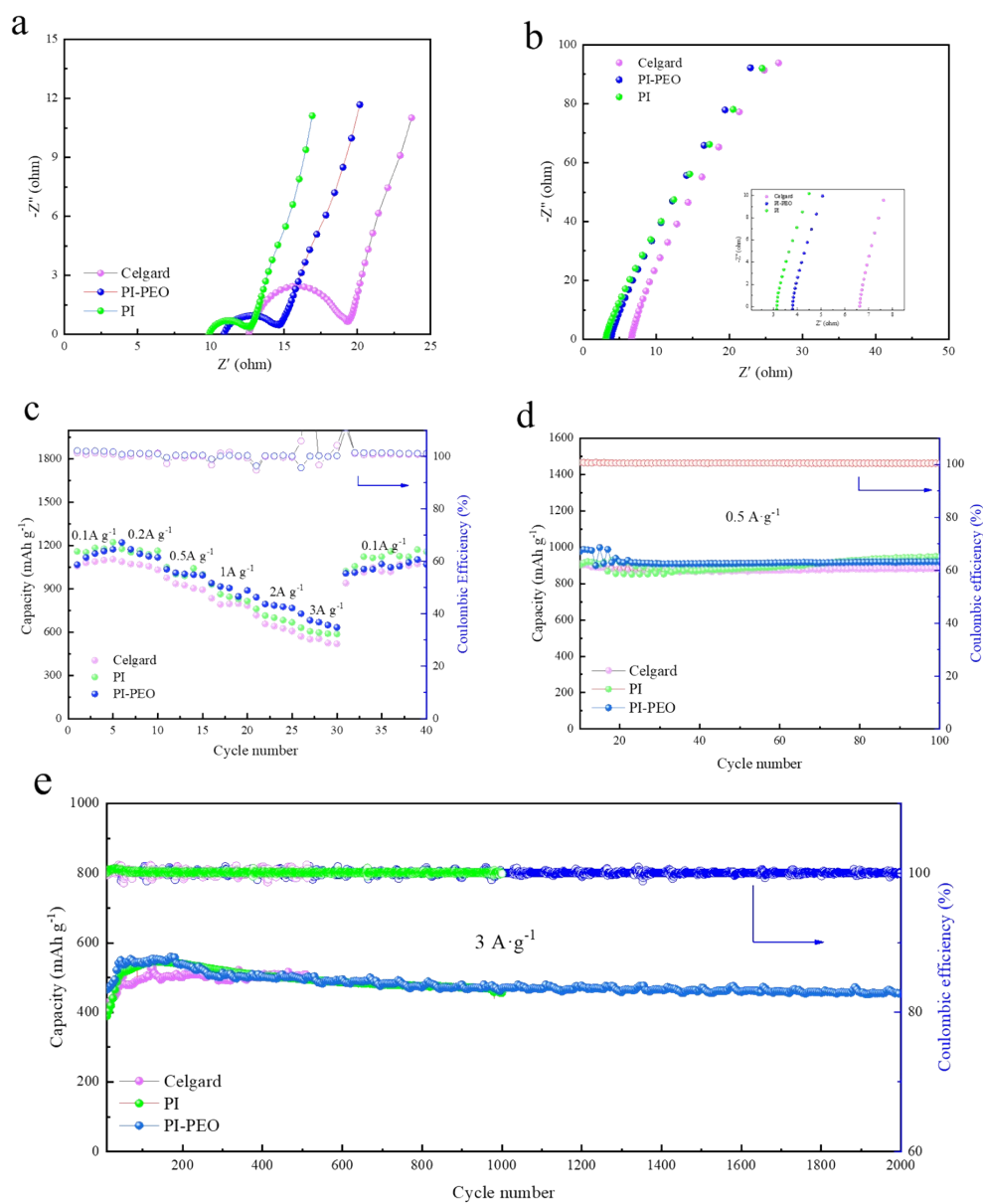


Fig. S5. Battery performances of different separators: (a) EIS curves based on SS|separator|SS; (b) EIS curves based on S|separator|Na; (c) Rate capacities; (d) Cycling performance at $0.5A\ g^{-1}$; (e) Cycling performance at $3A\ g^{-1}$.