Electronic Supplementary Material (ESI) for RSC Advances.

Supporting Information

Nonflammable quasi-solid-state electrolyte for stable lithium-metal batteries

Qiushi Sun,[a] Xiao Chen,[a] Jian Xie,[*a,b] Xiongwen Xu,[c] Jian Tu[c], Peng Zhang[d] and Xinbing Zhao[*a,b]

[a]*State Key Laboratory of Silicon Materials, School of Materials Science and Engineering, Zhejiang University, Hangzhou 310027, P. R. China. E-mail: xiejian1977@zju.edu.cn; Zhaoxb@zju.edu.cn; Fax: +86-571-87951451; Tel: +86-571-87952181*

[b]*Key Laboratory of Advanced Materials and Applications for Batteries of Zhejiang Province, Hangzhou 310027, P. R. China*

[c]*LI-FUN Technology Corporation Limited, Zhuzhou 412000, P. R. China*

[d] *Hangzhou Skyrich Power Co., LTD, Hangzhou 310022, P. R. China*

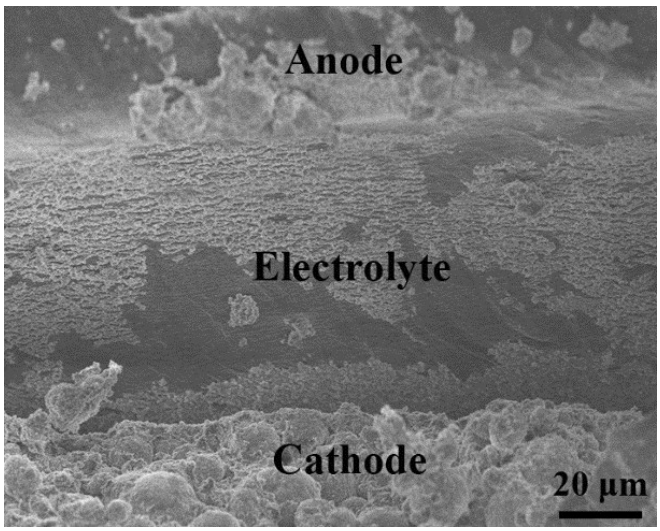

Fig. S1 Cross-section SEM image of the quasi-solid state Li cell.

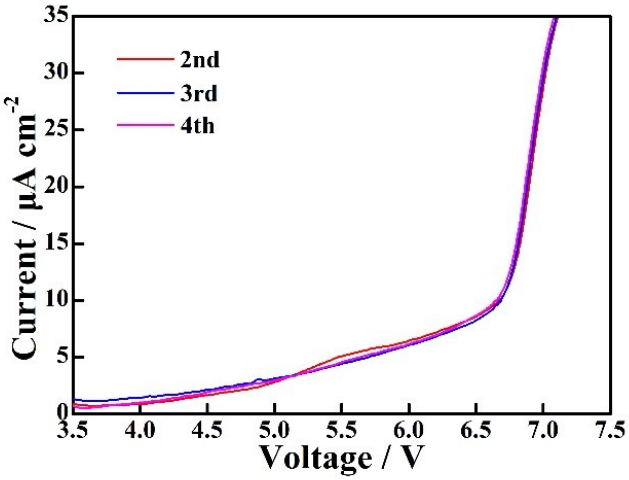

Fig. S2 LSV curves of QCE-P after the first sweeping.

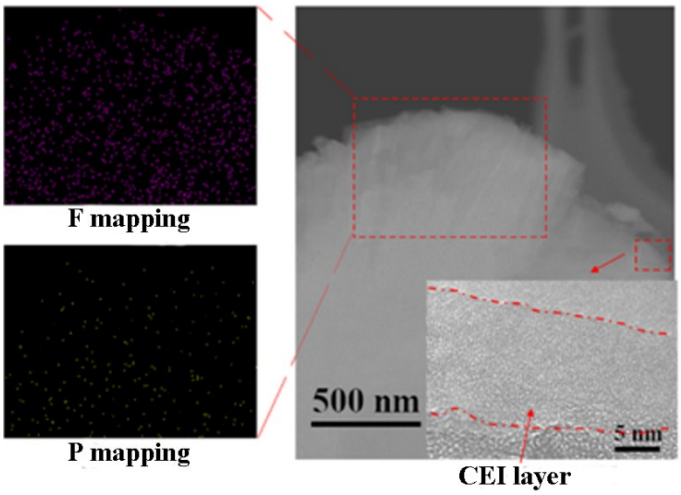

Fig. S3 HAADF-STEM image and EDS mapping of the particles from the cycled NMC811.

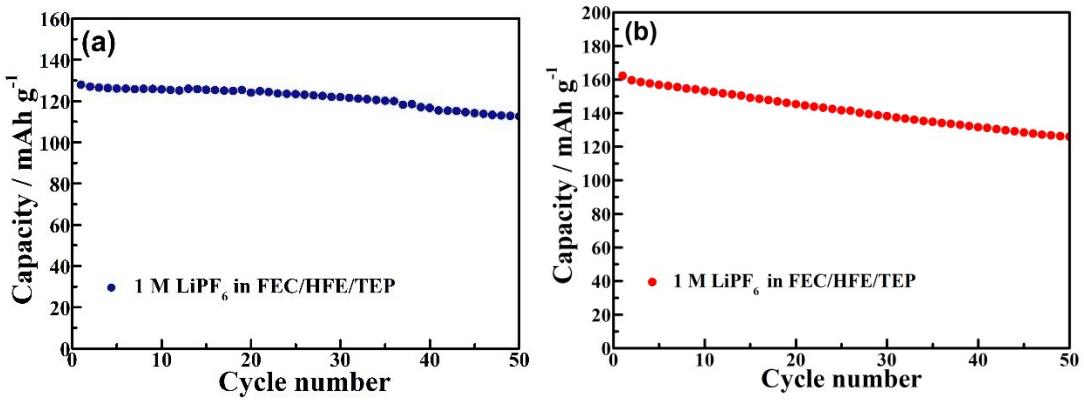

Fig. S4 Cycling performance of (a) LCO and (b) NMC811 cells in the liquid electrolyte at 1 C and 60°C.

Video 1: Fire test of the QCE-base membrane.

Video 2: Fire test of the QCE-P membrane.

Video 3: Folding test of the NMC811 pouch cell.

Video 4: Cutting test of the NMC811 pouch cell.

Video 5: Nail penetrationtest of the NMC811 pouch cell.