Electronic Supplementary Information

Revisiting Polymeric Single Lithium-Ion Conductors as an Organic Route for All-Solid-State Lithium Ion and Metal Batteries

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Figures

Figures

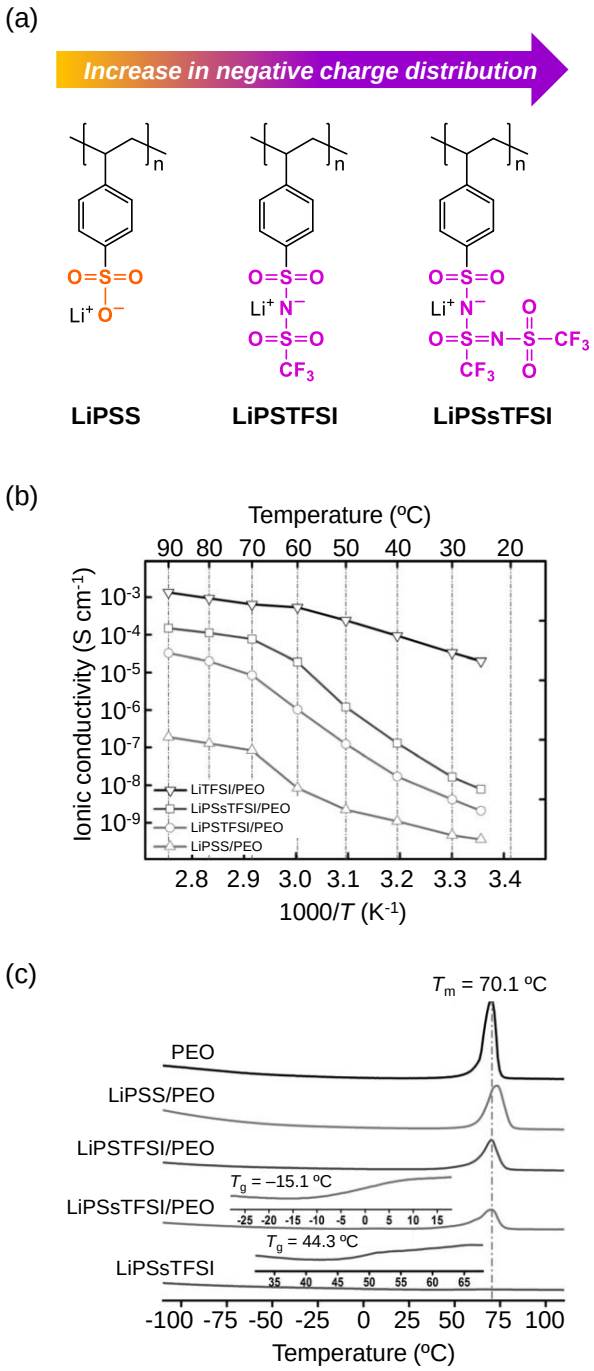

Fig. S1 (a) Polymeric SLICs (LiPSS, LiPSTFSI and LiPSsTFSI). (b) Temperature dependence of ionic conductivities for the polymeric SLIC/PEO blend electrolytes. (c) Differential scanning calorimetry (DSC) traces of neat PEO, LiPSsTFSI and the polymeric SLIC/PEO blend electrolytes. Reprinted with permission from ref. S1. Copyright 2016 Wiley-VCH.

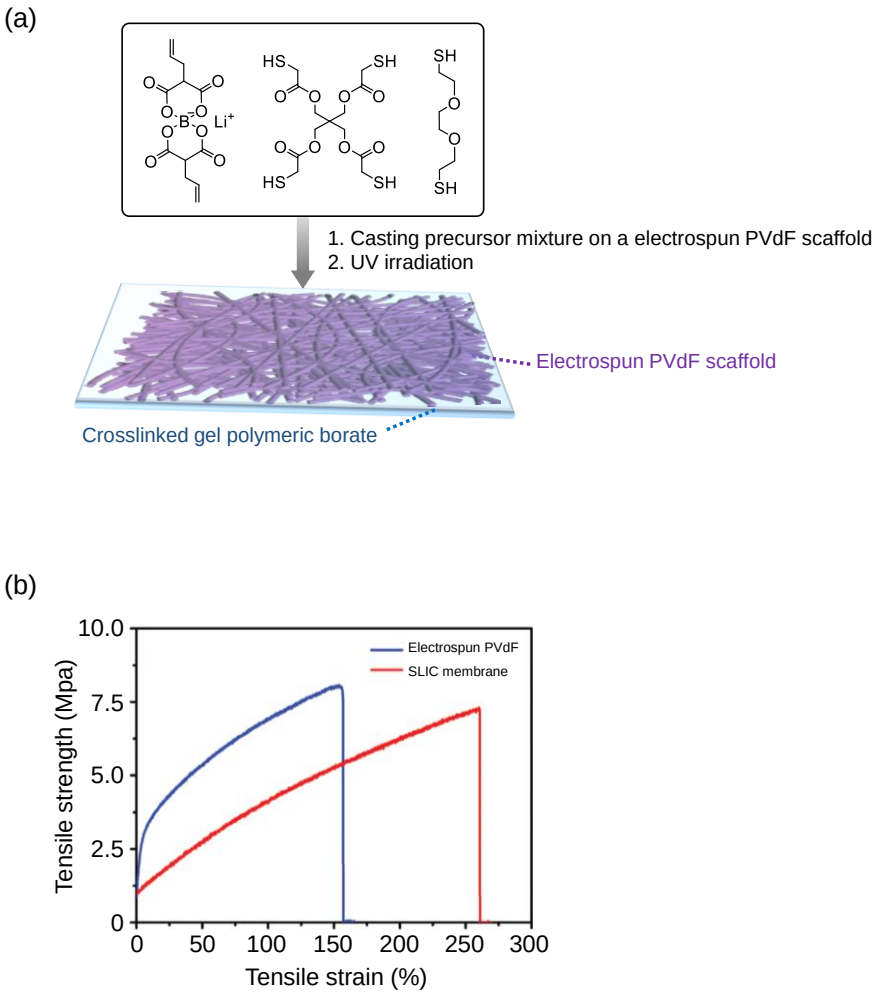

Fig. S2 (a) Schematic illustration for the preparation of the gel polymer SLIC membrane containing UV-crosslinked polymeric borate. (b) Stress–strain curves of the SLIC membrane and an electrospun PVdF. Reprinted with permission from ref. S2. Copyright 2018 Wiley-VCH.

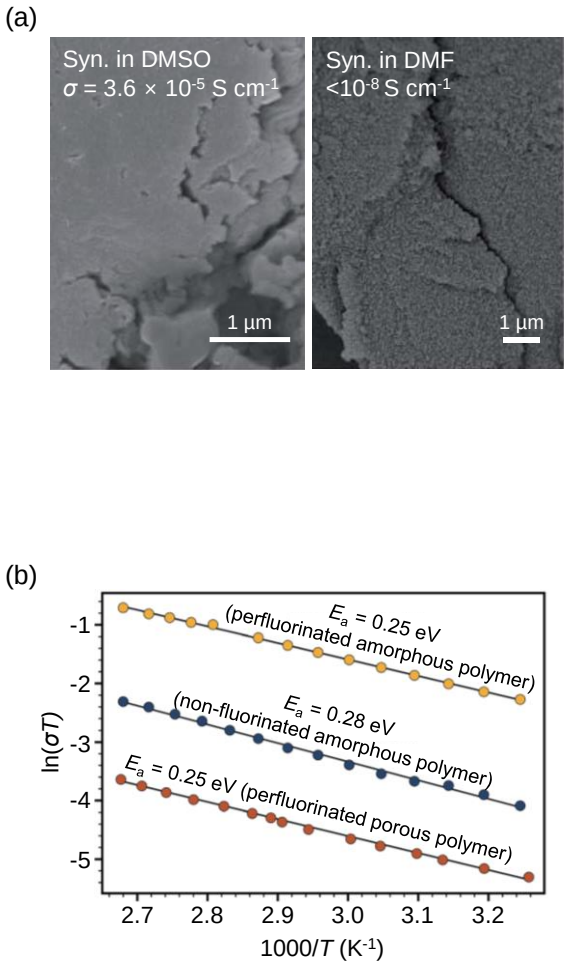

Fig. 3 (a) SEM images of the non-fluorinated polymeric tetraarylborates synthesized in DMSO (left) and DMF (right) (σ: ionic conductivity). (b) Temperature dependence of ionic conductivities for the non-fluorinated and perfluorinated polymeric tetraarylborates. Reprinted with permission from ref. S3. Copyright 2015 Royal Society of Chemistry.

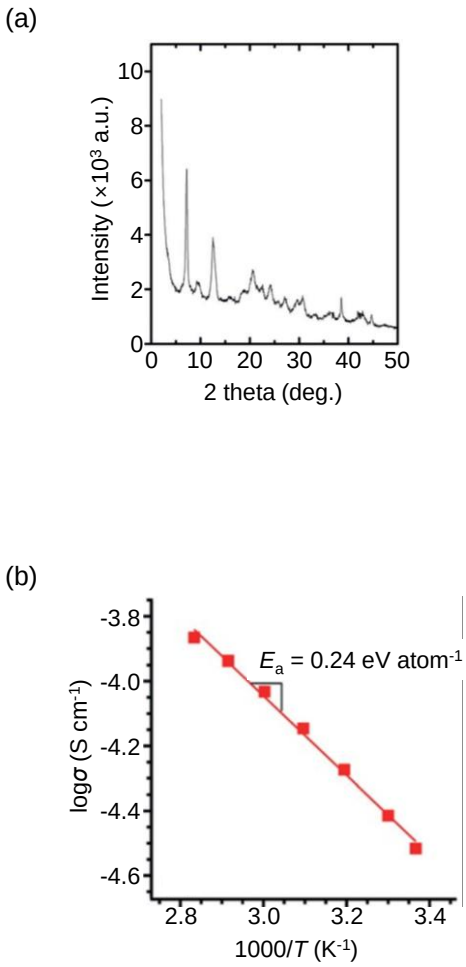

Fig. S4 (a) PXRD pattern of the spiroborate-linked anionic COF. (b) Temperature dependence of ionic conductivity for the anionic COF/PVdF/PC blend electrolyte (σ: ionic conductivity). Reprinted with permission from ref. S4. Copyright 2016 Wiley-VCH.

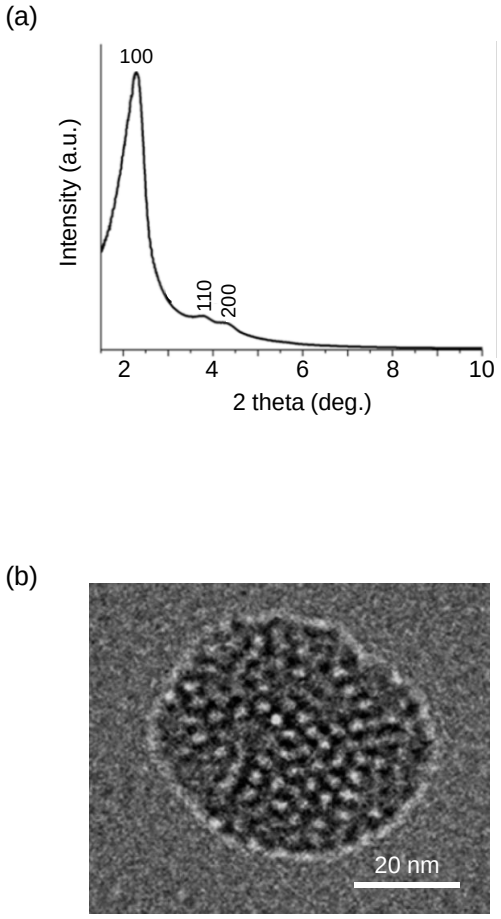

Fig. S5 (a) Small angle XRD pattern and (b) TEM image of the sulfonylimide/oligoether-incorporated mesoporous SiO_2. Reprinted with permission from ref. S5. Copyright 2017 American Chemical Society.

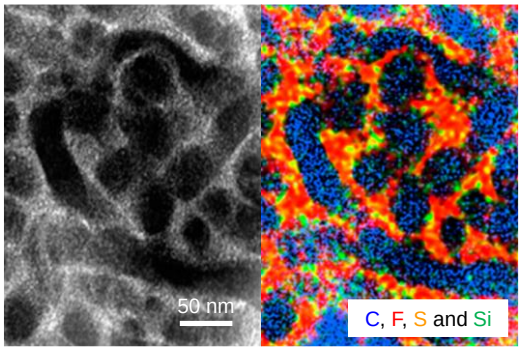

Fig. S6 STEM image of the silsesquioxane-based hybrid/SEO blend electrolyte along with composite elemental mapping for carbon (C; blue), fluorine (F; red), sulfur (S; yellow) and silicon (Si; green). Reprinted with permission from ref. S6. Copyright 2017 American Chemical Society.

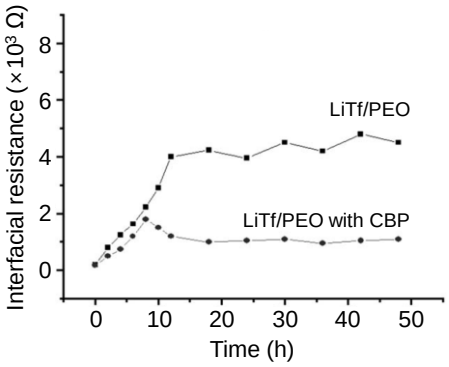

Fig. S7 Change in interfacial resistance as a function of time for the Li|Li symmetric cells with/without CBP additive. Reprinted with permission from ref. S7. Copyright 2010 Wiley Periodicals, Inc.

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