

Supporting Information

Dual-Interfacial Engineering via LiPF₆ Treatment: Eradicating Li₂CO₃ on LLZTO and Regulating SEI for High-Voltage Solid-State Batteries

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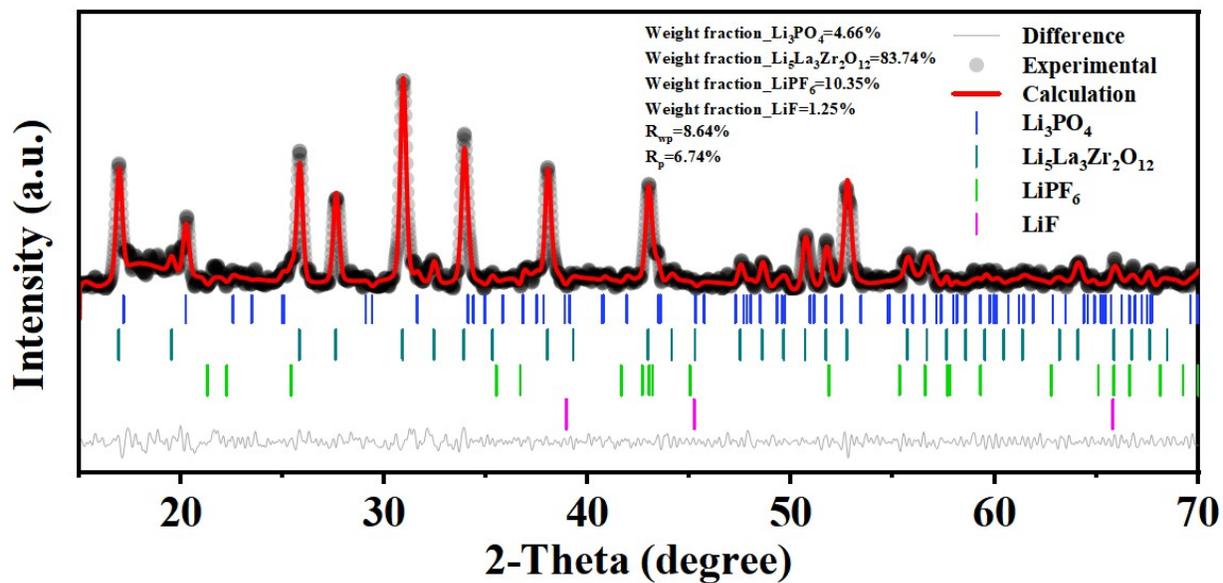


Figure S1. Rietveld refinement of the XRD pattern for LiPF_6 -treated LLZTO and quantitative analyses of its phase compositions.

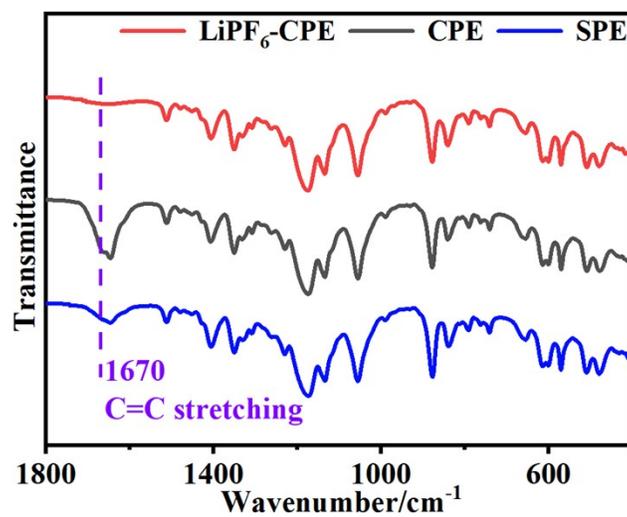


Figure S2. Fourier transform infrared spectra of LiPF₆-CPE, CPE, and SPE, with the C=C vibrational peak at 1670 cm⁻¹.

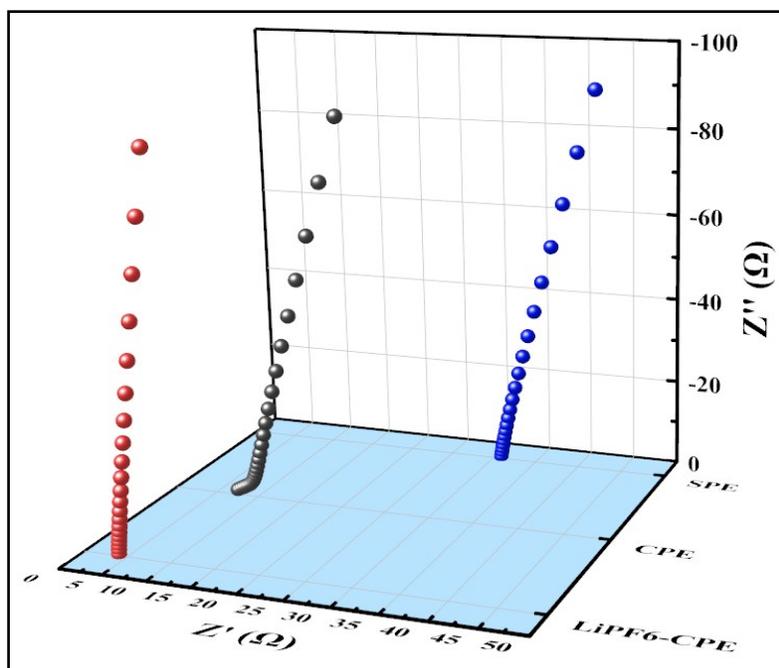


Figure S3. EIS Diagrams of $\text{LiPF}_6\text{-CPE}$, CPE, and SPE.

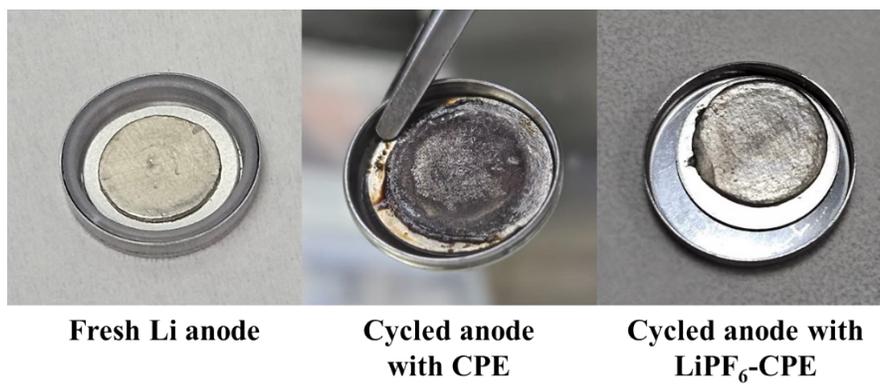


Figure S4. Photographs of fresh lithium metal anodes before cycling, cycled anode with CPE, and cycled anode with LiPF₆-CPE.

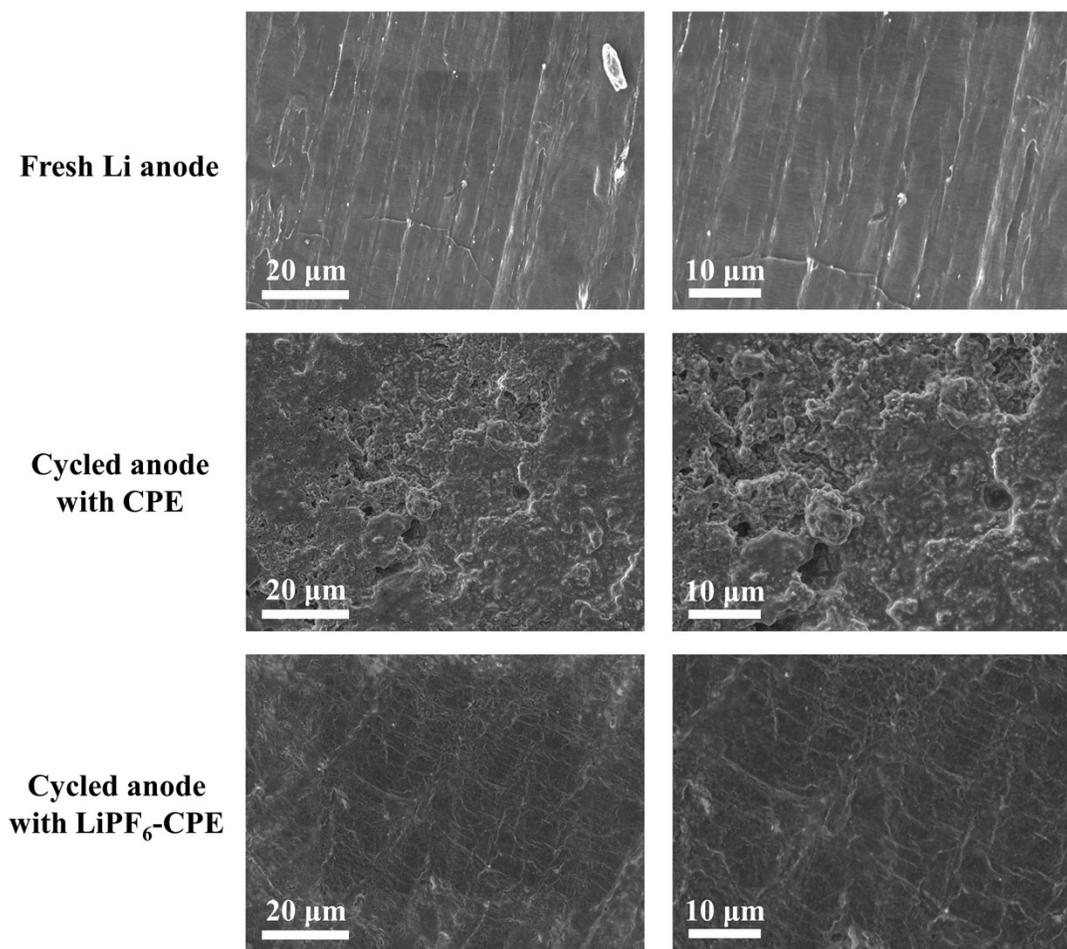


Figure S5. SEM images of fresh lithium metal anodes before cycling, cycled anode with CPE, and cycled anode with LiPF₆-CPE, with scale bars of 20 μm and 10 μm respectively.

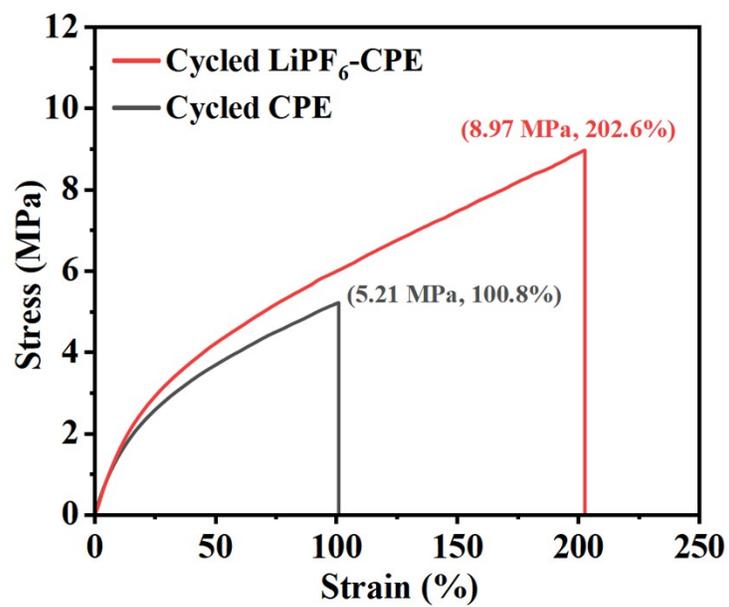


Figure S6. Mechanical characteristics of Cycled LiPF₆-CPE and Cycled CPE.