

Description of Additional Supplementary Files

Title: Supplementary Data 1

Description: Atomic coordinates of the Density Functional Theory -optimized structures.

Title: Supplementary Data 2

Description: Initial and final configurations of the HCE, LHCE, and SRCE electrolyte systems obtained from the molecular dynamics simulations

Title: Supplementary Movie 1

Description: Nail penetration test of an Ah-level Li metal pouch cell with SRCE electrolyte, showing no fire or explosion upon penetration.