

Supporting Information

Noncovalent Approach to Liquid-Crystalline Ion Conductors: High-Rate Performances and Room Temperature Operation for Li-Ion Batteries

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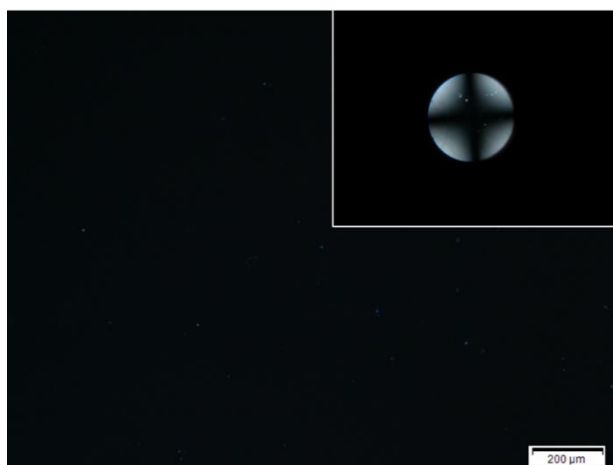


Figure S1. Polarizing optical microscopic image of **1**/EC(29) at 25 °C in the homeotropically aligned smectic A phase. The inset shows the conoscopic image.

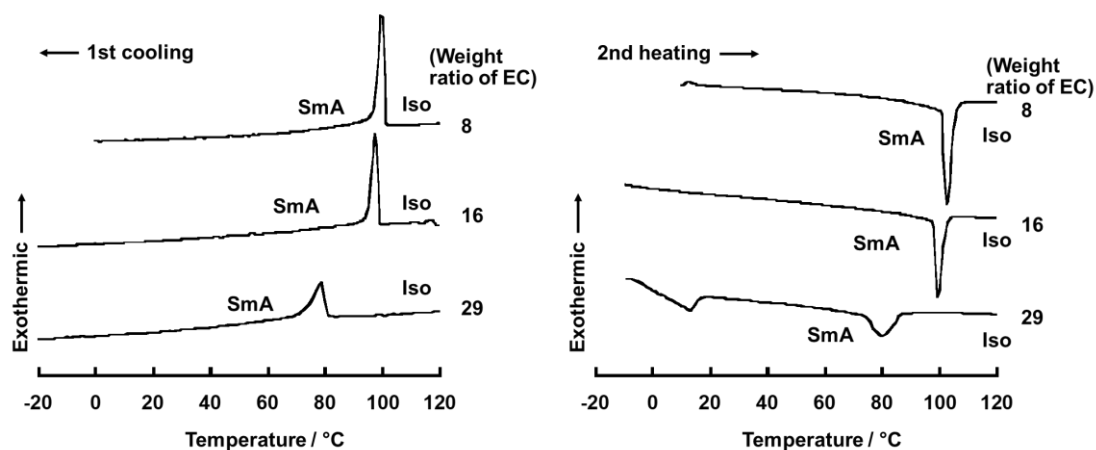


Figure S2. DSC thermograms of the mixtures of **1**, EC, and LiTFSI on 1st cooling (left) and 2nd heating (right) at a scanning rate of 10 K min⁻¹. Iso: isotropic; SmA: smectic A.

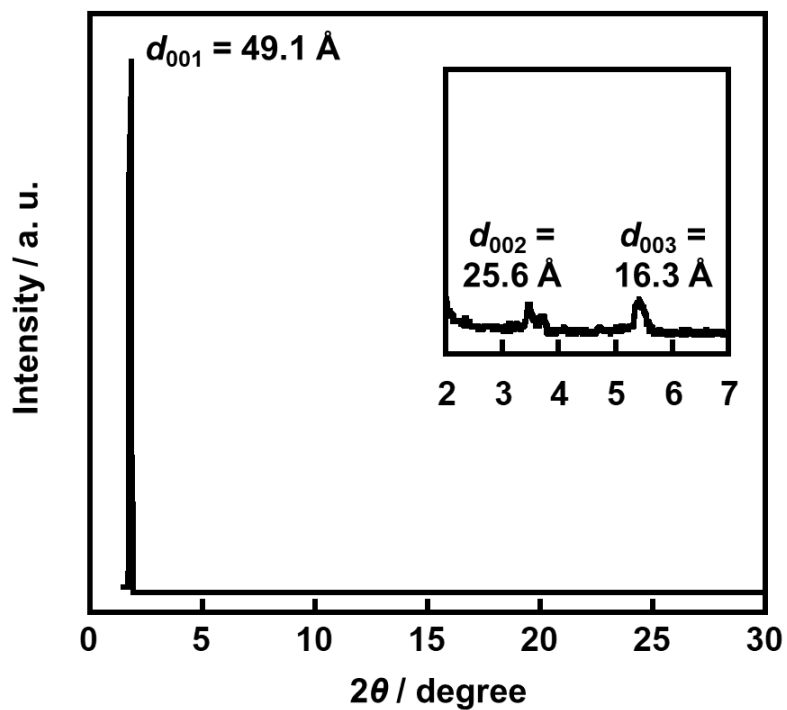


Figure S3. X-ray diffraction pattern of 1/EC(29) at 60 °C.

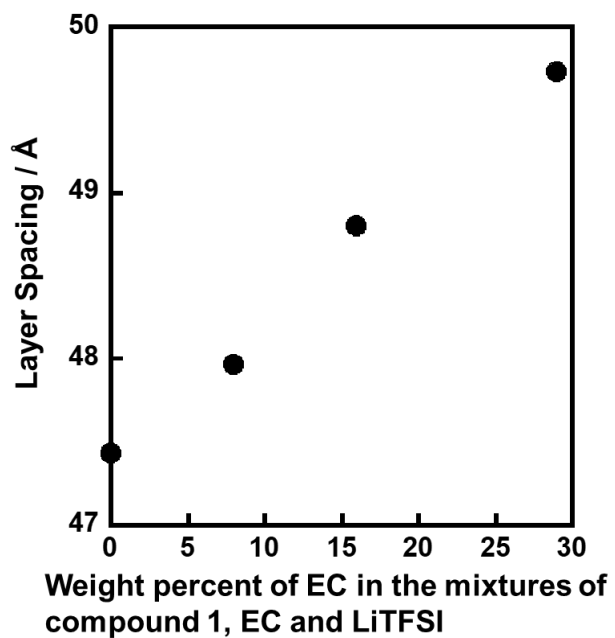


Figure S4. Interlayer spacings of the smectic structures of the mixtures of different weight ratios of EC at 60 °C.

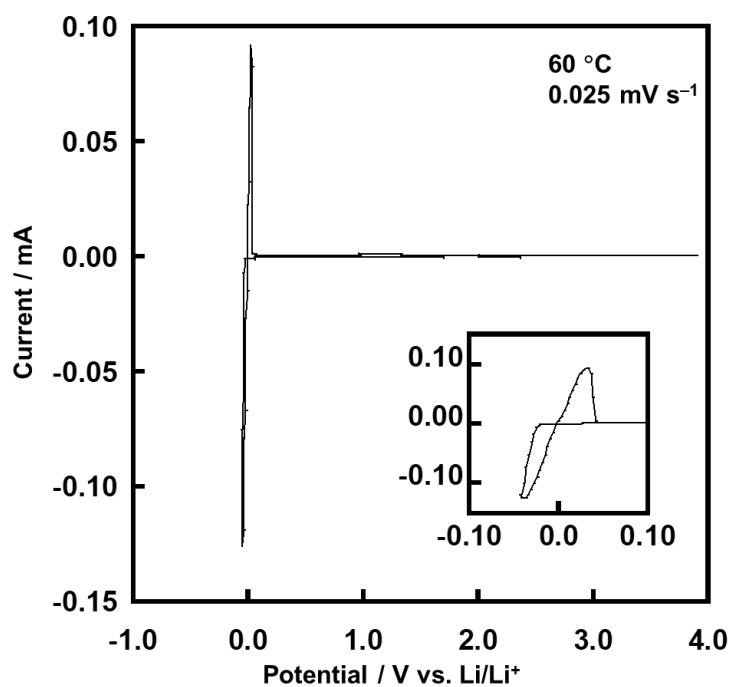


Figure S5. Cyclic voltammogram for the cell composed of Li metal/LC electrolyte (1/EC(29))/stainless-steel (SUS316L) in the potential range from -0.04 to 3.9 V versus Li/Li^+ at the scan rate of 0.025 mV s^{-1} at $60 \text{ }^\circ\text{C}$.