A Sulfolane-Based Electrolyte Optimized for Microporous Activated Carbon-Sulfur Composites for Lithium Sulfur Batteries
Supplementary Information

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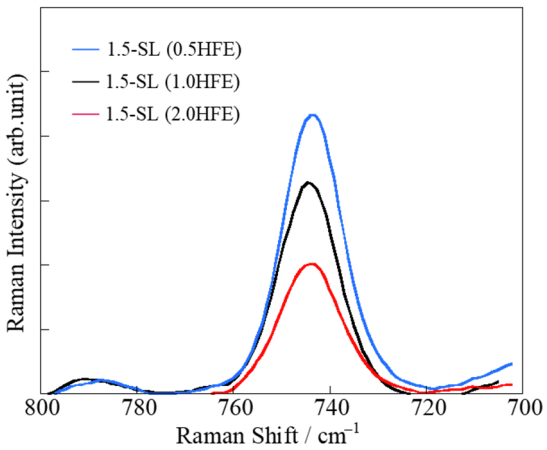
To optimize the amount of HFE, the ratio of LiTFSI to SL in the 1.5-SL electrolyte was fixed with varying amounts of HFE. The electrolyte viscosity decreased with increasing ratio of HFE as diluent. The ionic conductivity decreased when HFE molar was above 1.0 because LiTFSI is almost insoluble in HFE.

Table S1. Physical properties of various sulfolane electrolytes with different ratios of HFE.

Name	LiTFSI	SL	HFE	Ion conductivity	Viscosity
	mol	mol	mol	mS/m	mPa S
1.5-SL (2.0HFE)	0.572	2.00	2.52	93.1	25.3
1.5-SL (1.0HFE)	0.572	2.00	1.26	124.8	60
1.5-SL (0.5HFE)	0.572	2.00	0.63	120.3	119.7
1.5-SL (HFE free)	0.572	2.00	0	86.5	763.8



FigureS1. Raman spectra for 1.5-SL electrolytes with different ratio of HFE