Supporting Information for:

Localized High Concentration Electrolyte Behavior Near a Lithium-Metal Anode Surface

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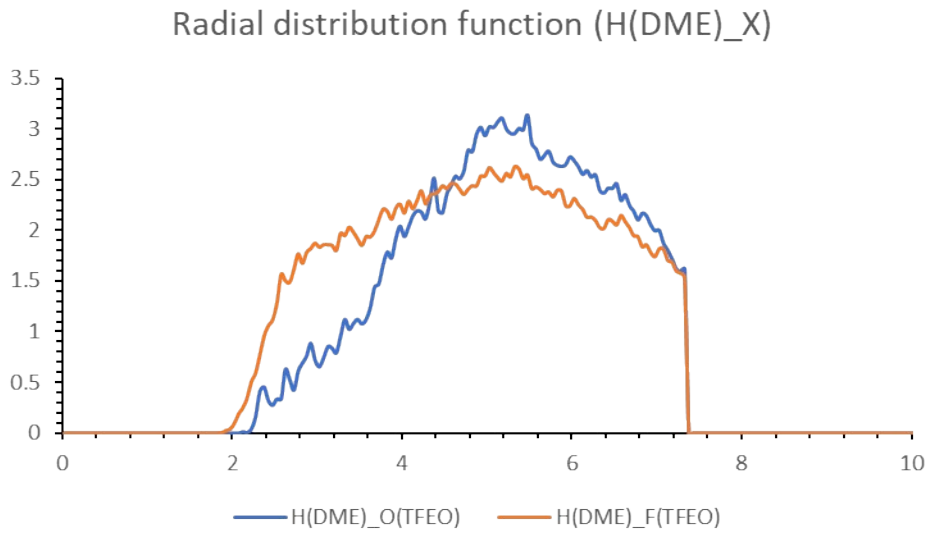


Figure S1. RDF profile for hydrogen atoms in DME and oxygen/fluorine atoms in TFEO obtained from AIMD simulations.

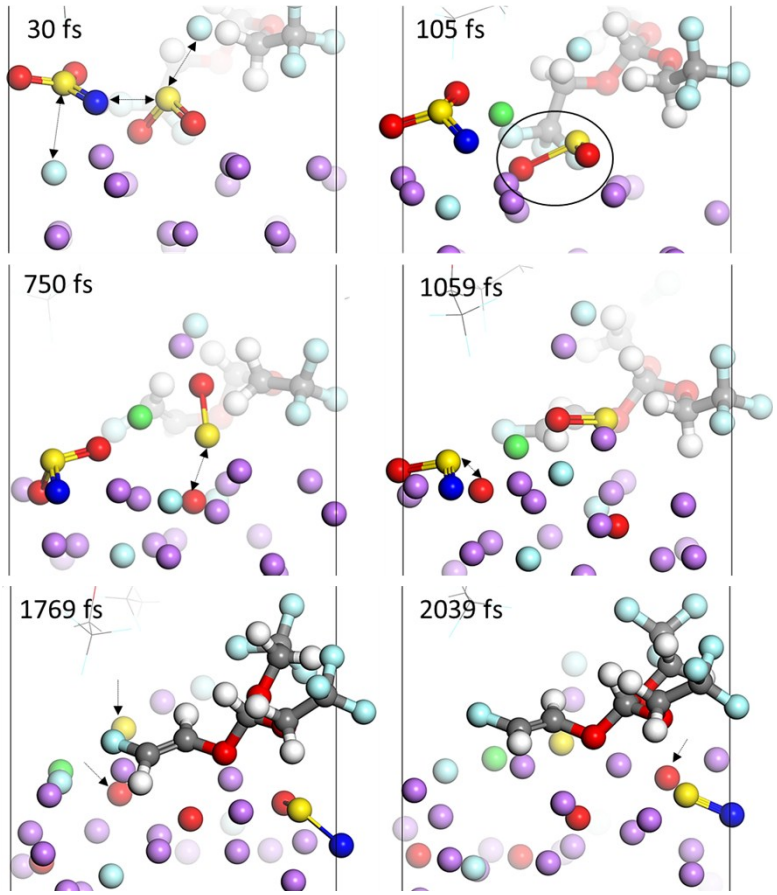


Figure S2. Reduction mechanism of the LiFSI salt in Configuration 1. Color code: lithium from the slab (salt), purple (green); oxygen, red; carbon, gray; fluorine, light blue; sulfur, yellow, nitrogen, blue; hydrogen, white.

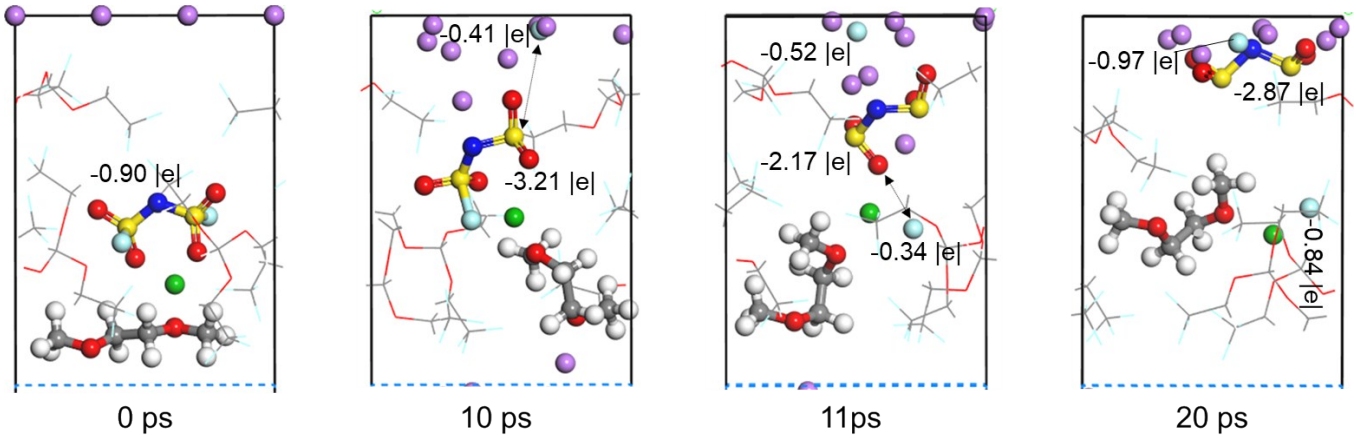
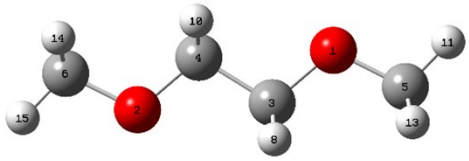
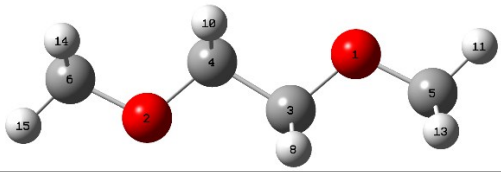
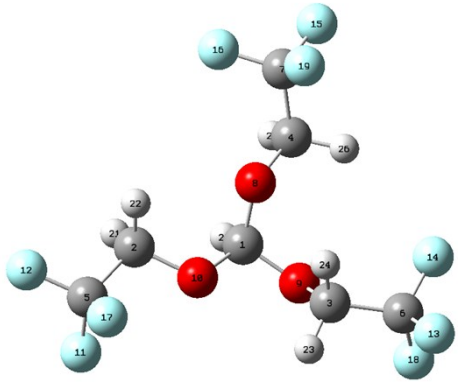
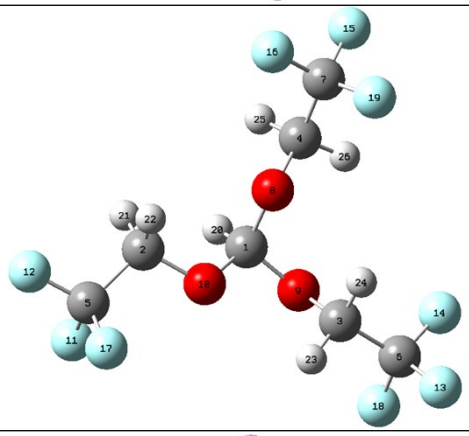
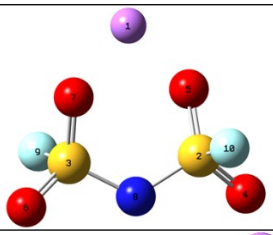
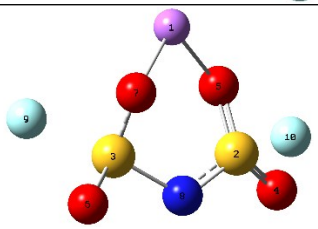
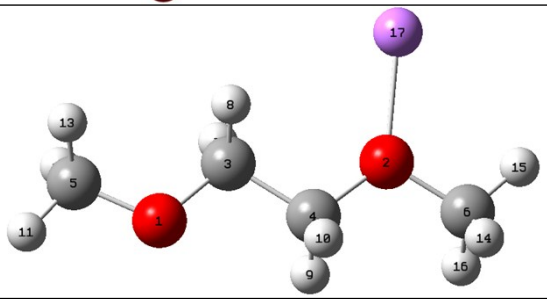
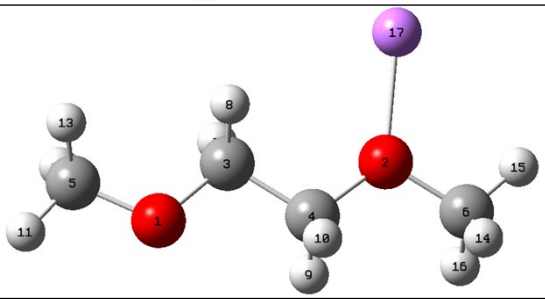
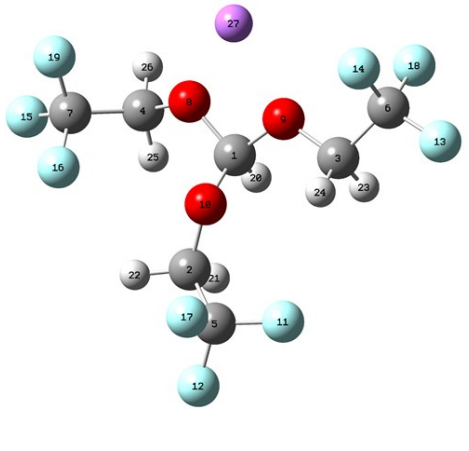
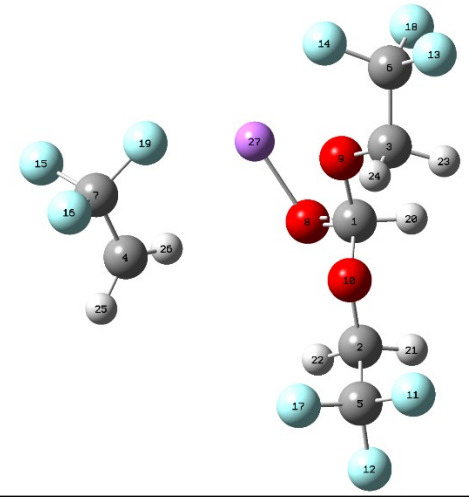
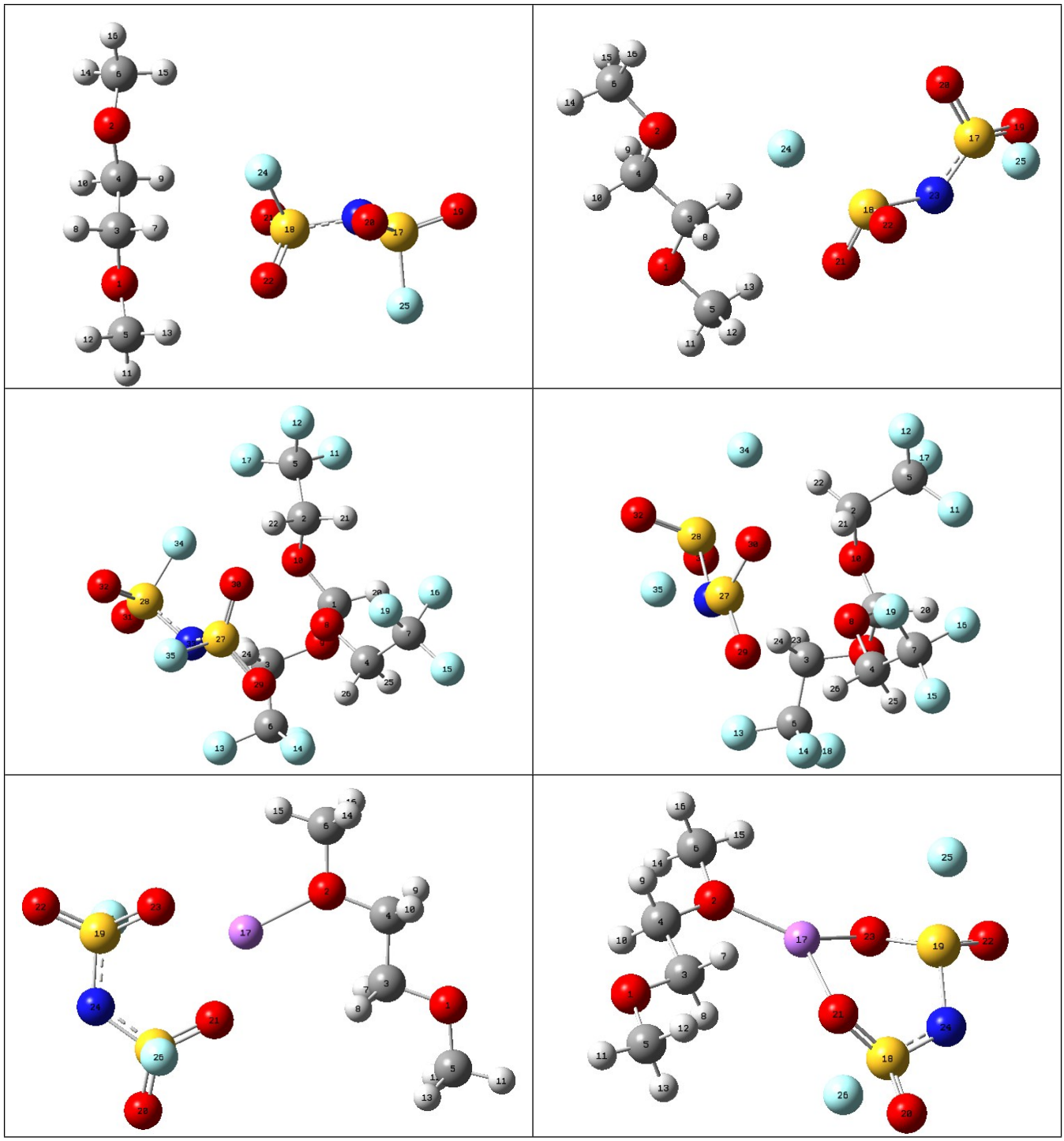


Figure S3. Reduction mechanism of the LiFSI salt in Configuration 2. Color code as in Figure S2.

Initial State	Reduced State
	
	
	
	
	



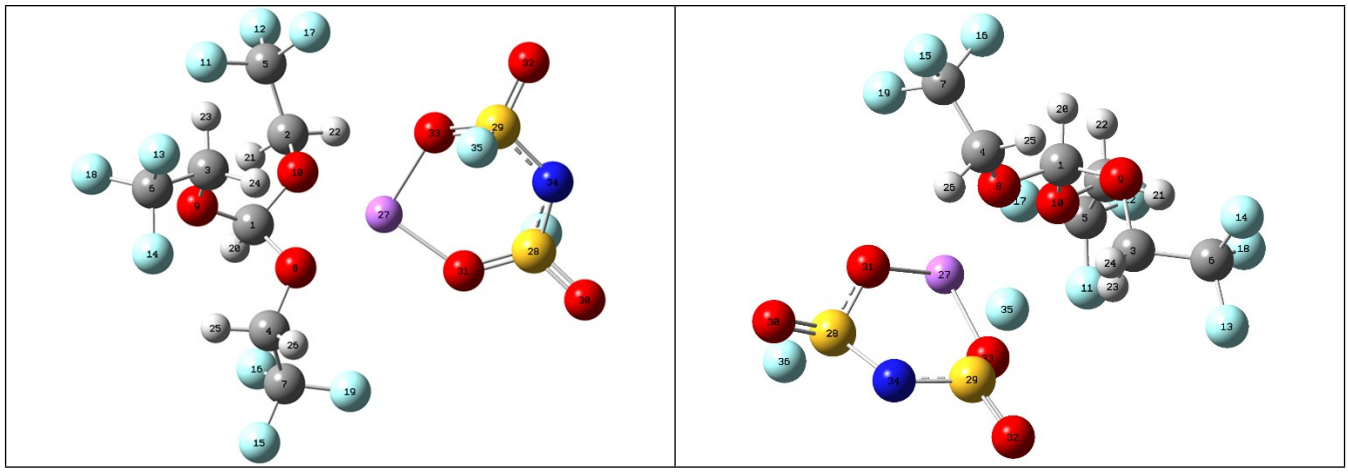


Figure S4. Initial and reduced state of each system listed in Table 2 (main text). Color code as in Figure S2.