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Supporting Information

Concentrated Ionic-Liquid-Based Electrolytes for High-Voltage Lithium Batteries with Improved Performance at Room Temperature

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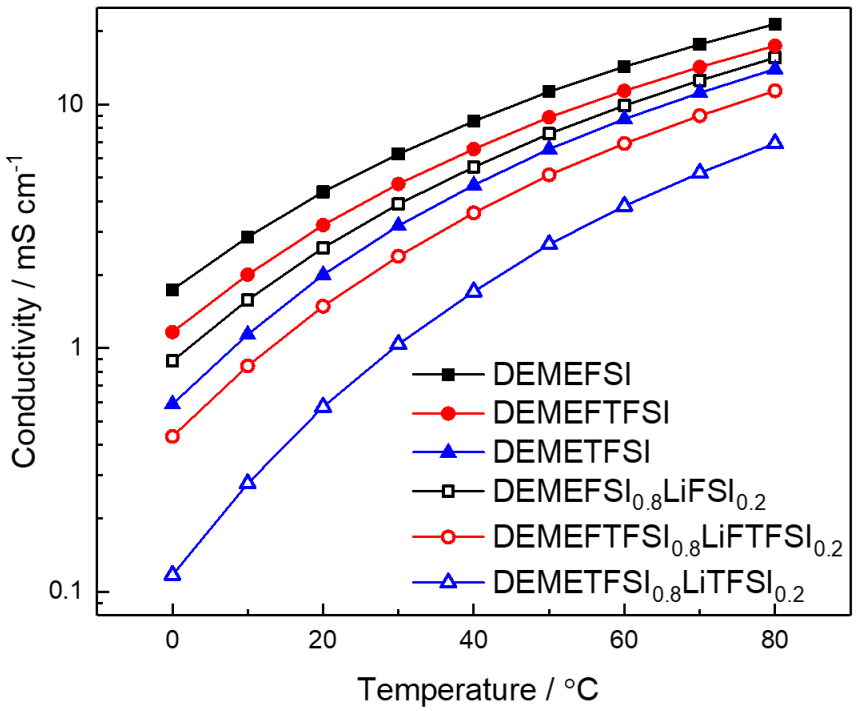

Figure S1. Conductivity dependence on temperature for the DEME-based ILs and $DEMEFSI_{0.8}LiFSI_{0.2}$, $DEMEFTFSI_{0.8}LiFTFSI_{0.2}$, and $DEMETFSI_{0.8}LiTFSI_{0.2}$ electrolytes.

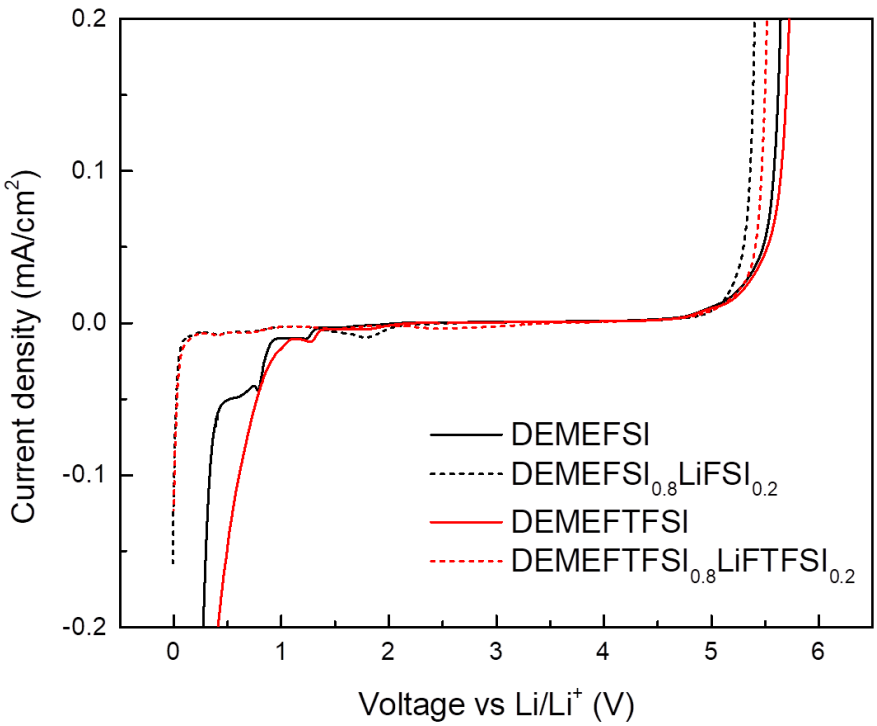

Figure S2. Linear sweep voltammetry of neat ILs and the 20 mol% electrolytes (scan rate = 1 mV s^{-1}, 20 °C). Platinum as the working electrode and lithium as the counter and reference electrode, respectively.

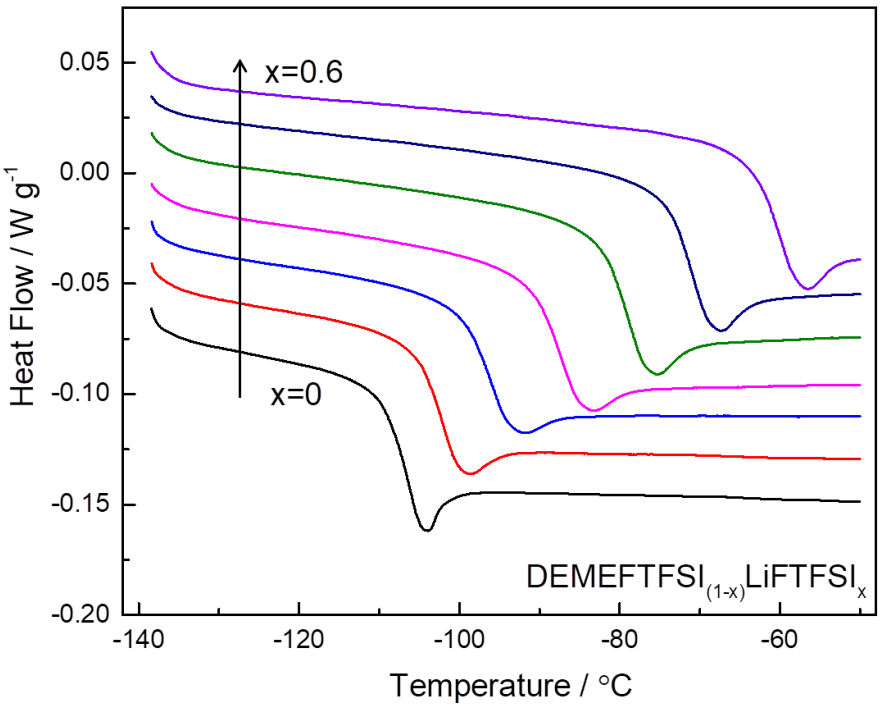

Figure S3. DSC heating traces of $DEMEFTFSI_{(1-x)}LiFTFSI_x$ mixtures. The traces are vertically shifted for clarity.

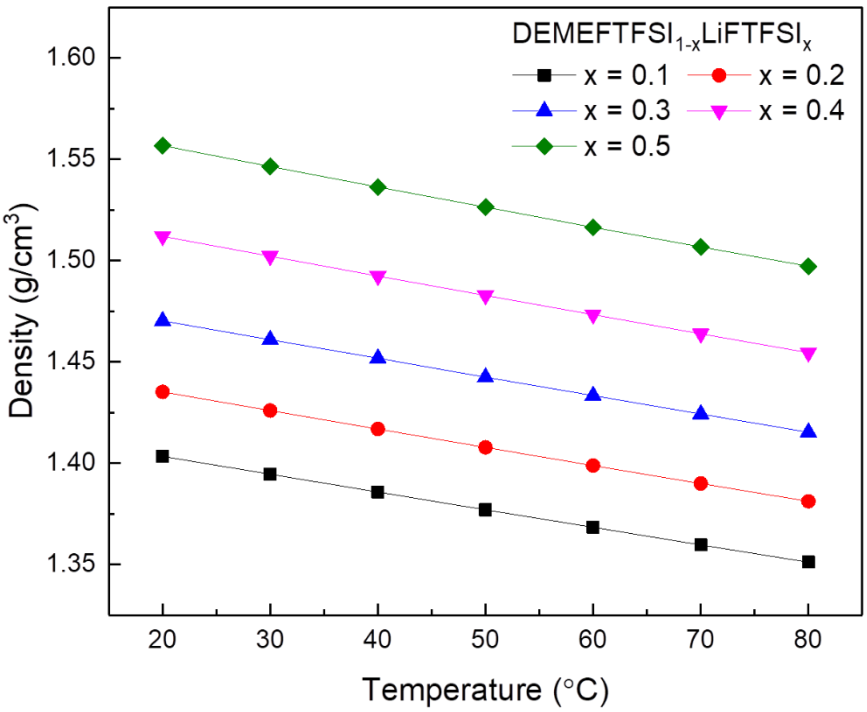

Figure S4. Density dependence on temperature for the $DEMEFTFSI_{(1-x)}LiFTFSI_x$ mixtures.