

## Supporting information

### **New Thiourea-Based Ionic Liquid as an Electrolyte Additive to Improve Cell Safety and Enhance Electrochemical Performance in Lithium-Ion Batteries**

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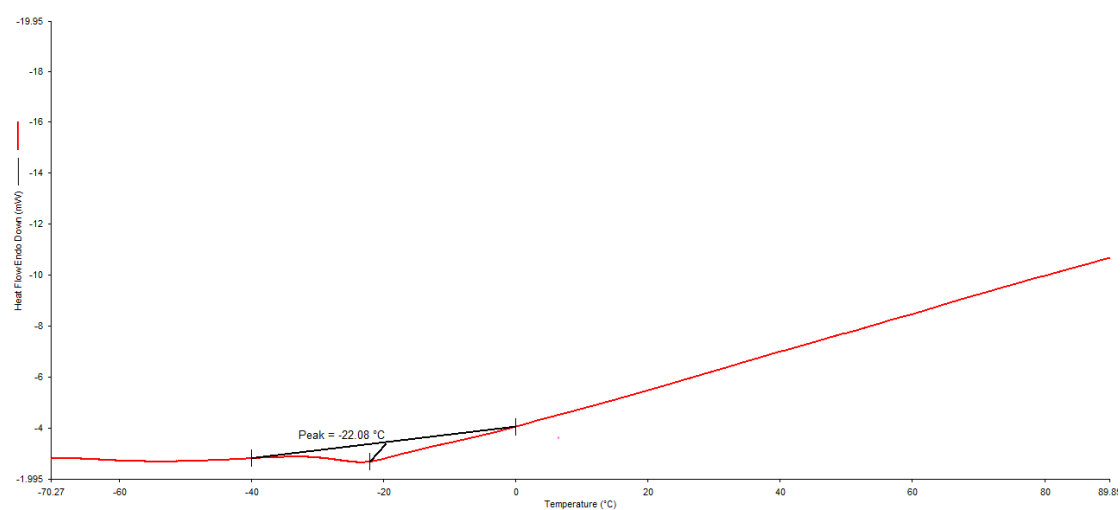
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<b>Figure S2.</b>	$^1\text{H}$ NMR (400 MHz) spectra of IL in DMSO- $d_6$ .
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<b>Figure S4.</b>	FTIR spectra of IL in $\text{CHCl}_3$ .
<b>Figure S5.</b>	ESI-MS Spectra for IL.



**Figure S1.** Low temperature DSC graph of pure IL as a function of temperature

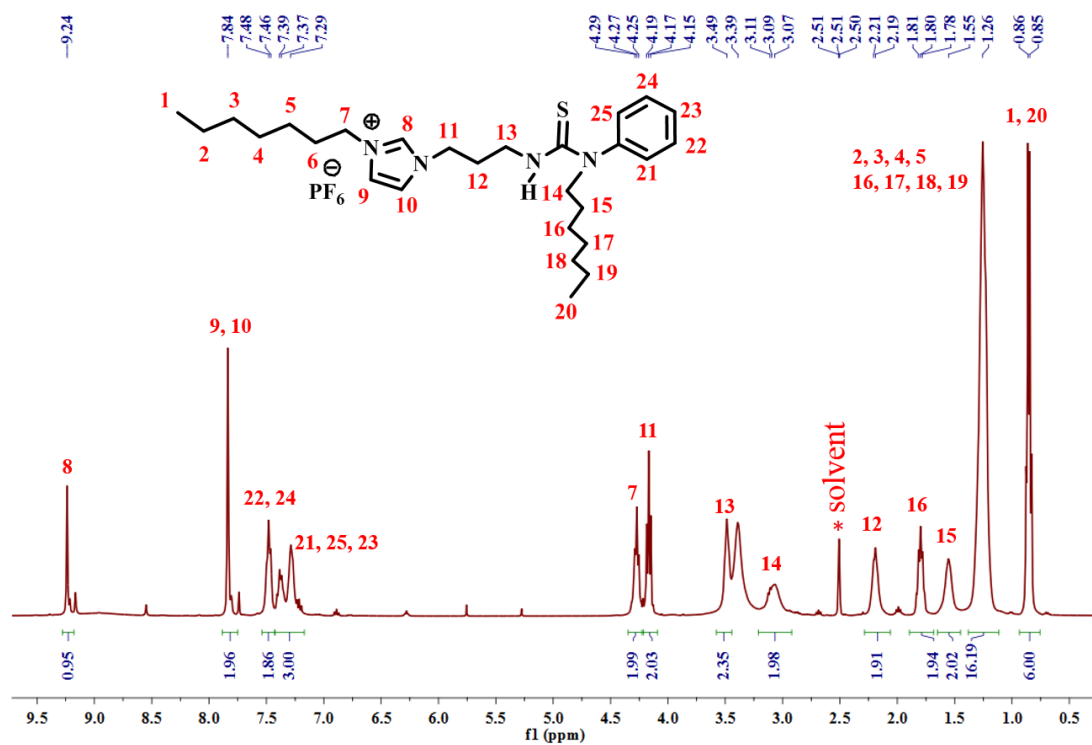


Figure S2.  $^1\text{H}$  NMR (400 MHz) spectra for IL in  $\text{DMSO-d}_6$ .

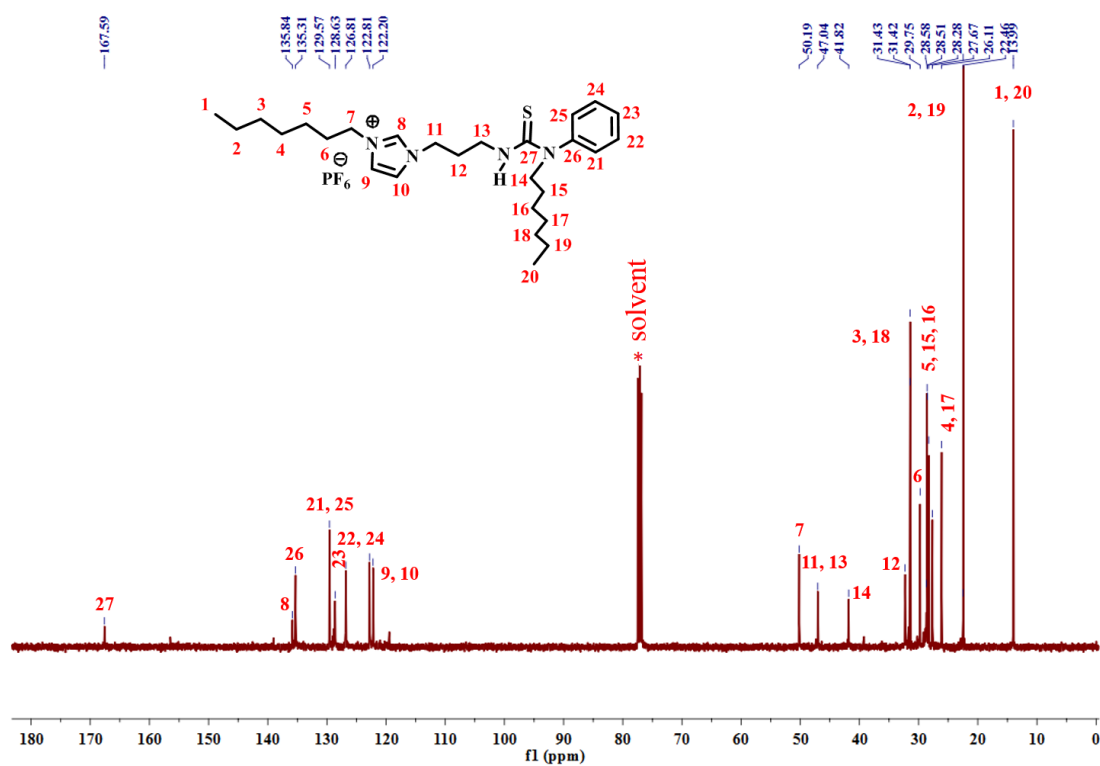


Figure S3.  $^{13}\text{C}$  NMR (100 MHz) spectra for IL in  $\text{DMSO-d}_6$ .

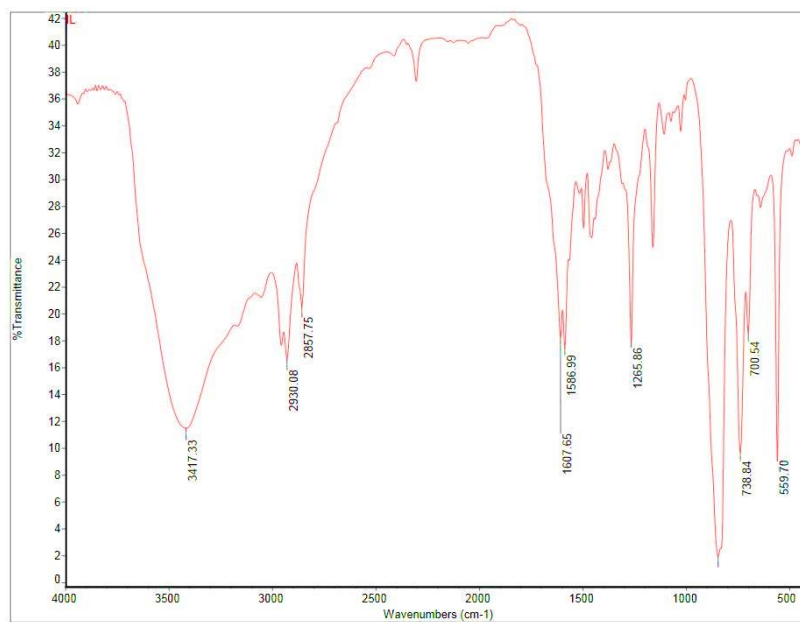


Figure S4. FTIR spectra of IL in CHCl<sub>3</sub>.

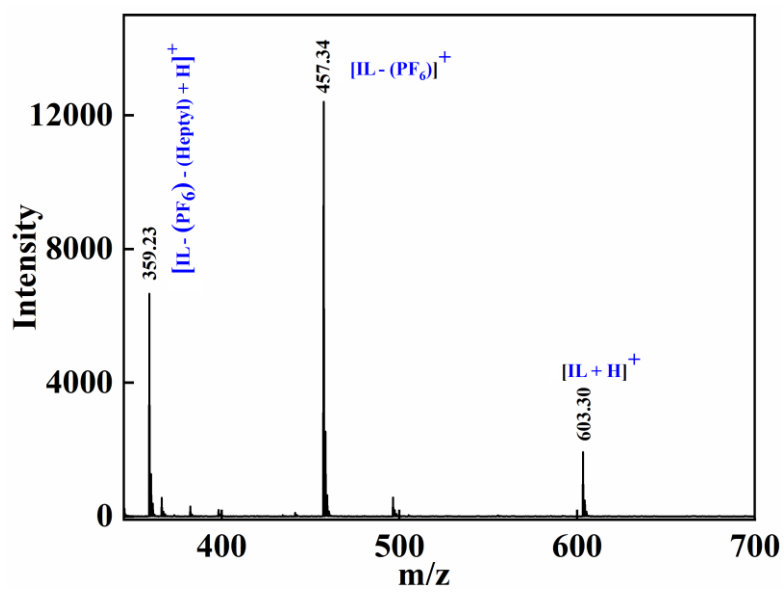


Figure S5. ESI-MS Spectra of IL.