Supplementary Information

Synthesis, Physical and Ion Conducting Properties of 1,2,3-Triazolium Ionic Liquids

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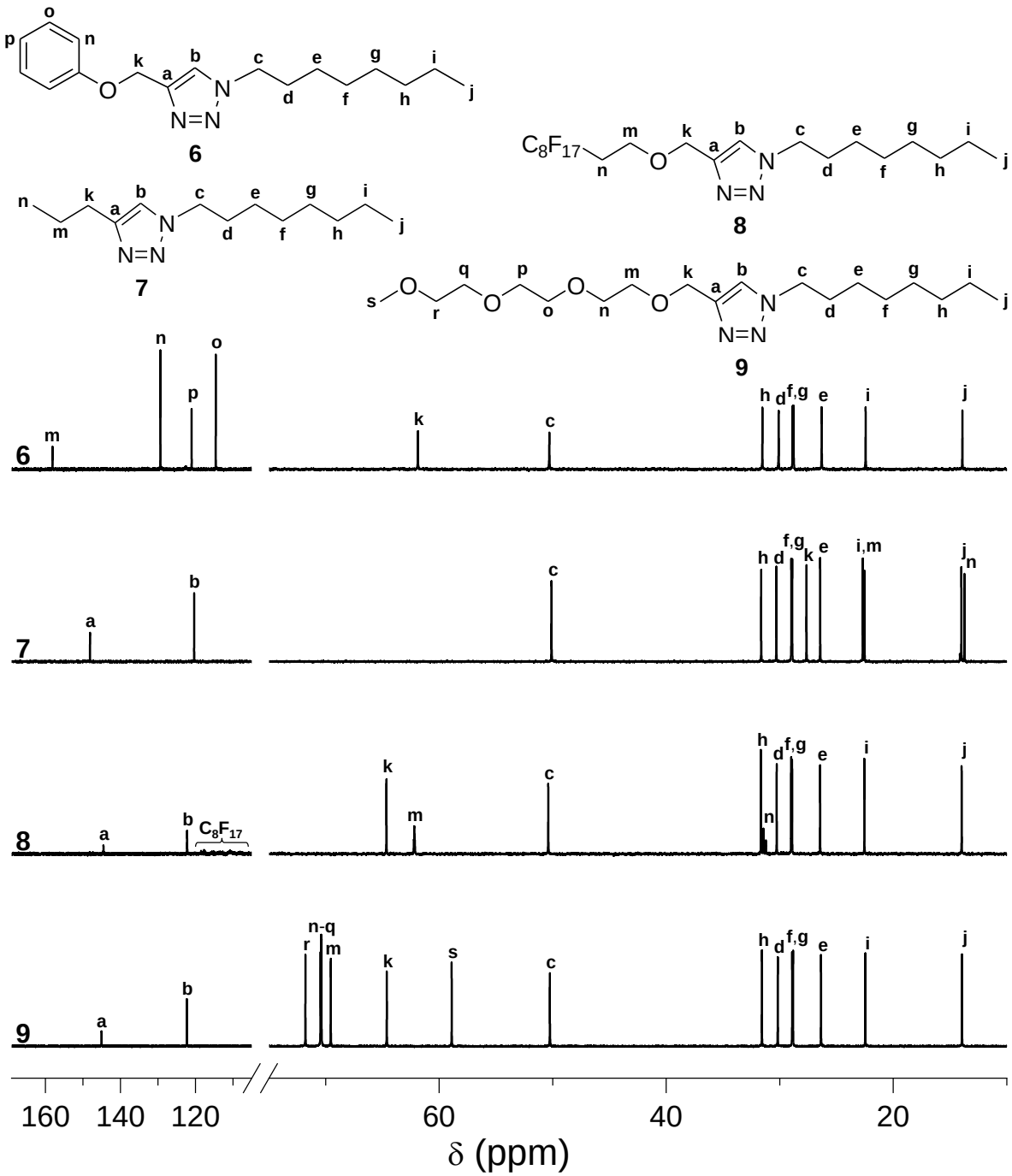


Figure S1. ^{13}C NMR spectra (400 MHz, 25 °C, $CDCl_3$) of 1,2,3-triazoles **6**-**9**.

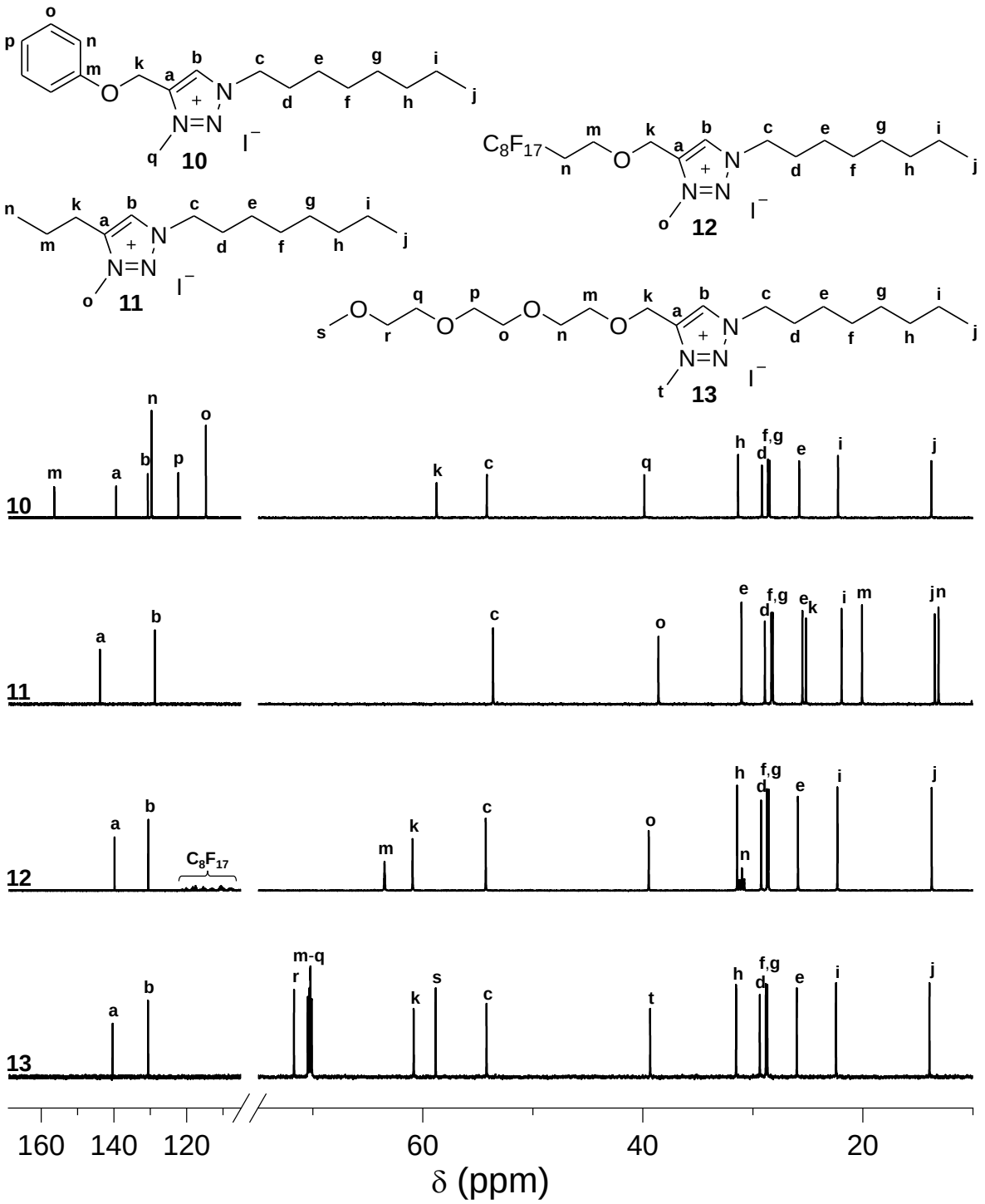


Figure S2. ^{13}C NMR spectra (100 MHz, 25 °C, $CDCl_3$) of 3-methyl-1,2,3-triazoliums **10**-**13**.

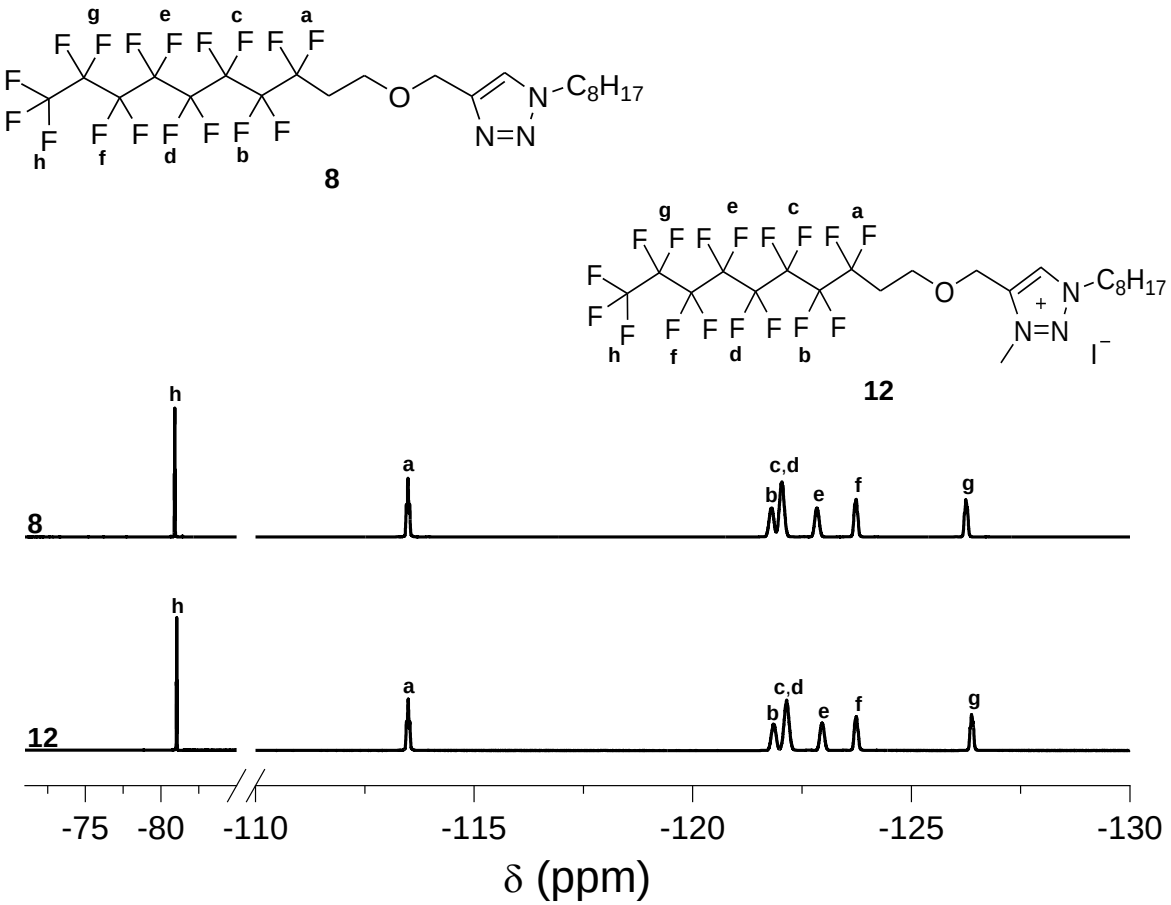


Figure S3. ^{19}F NMR spectra (376 MHz, 25 °C, $CDCl_3$) of 1,2,3-triazole **8** and 3-methyl-1,2,3-triazolium **12**.

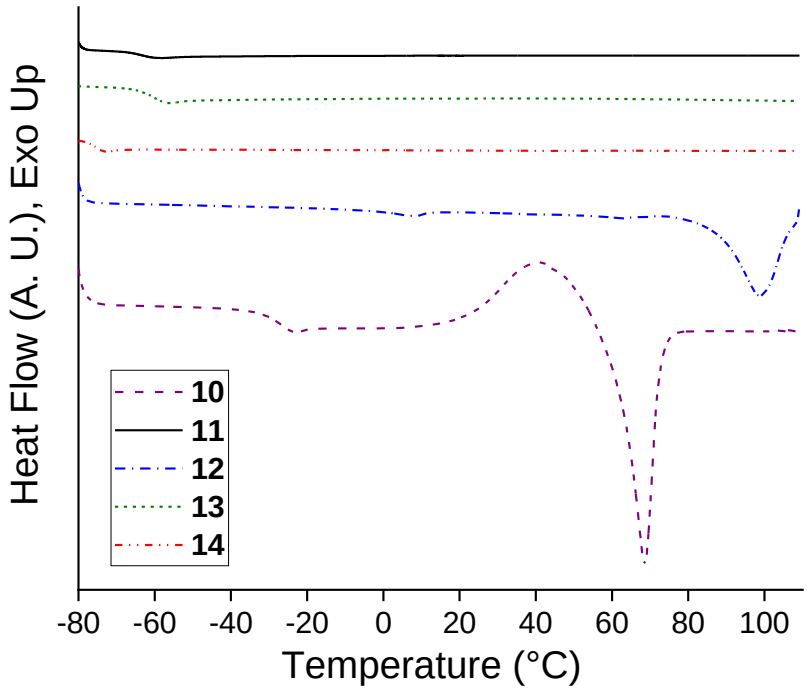


Figure S4. DSC traces of 3-methyl-1,2,3-triazoliums **10**-**14**.

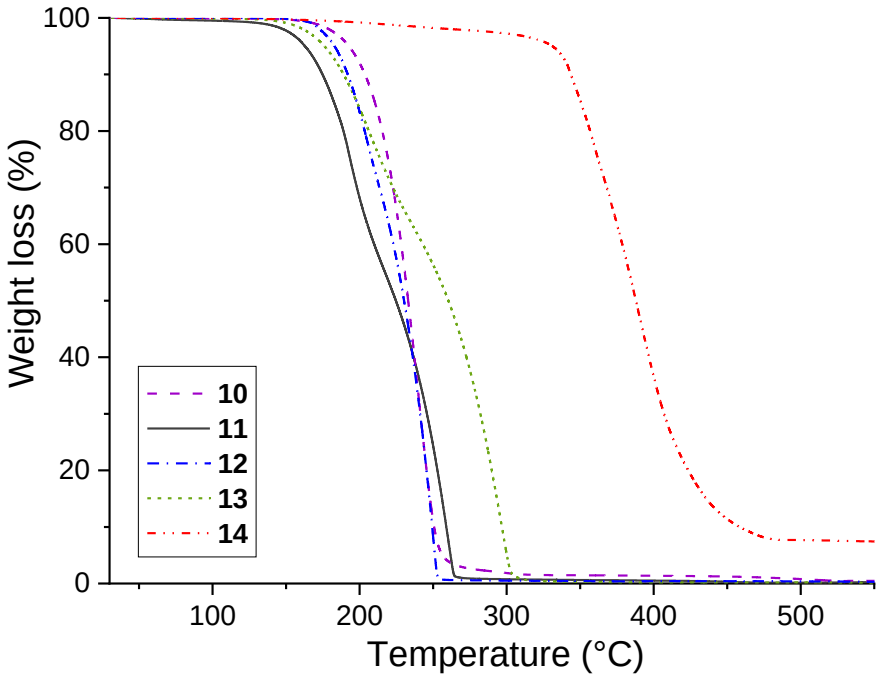


Figure S5. TGA traces of 3-methyl-1,2,3-triazoliums **10**-**14**.

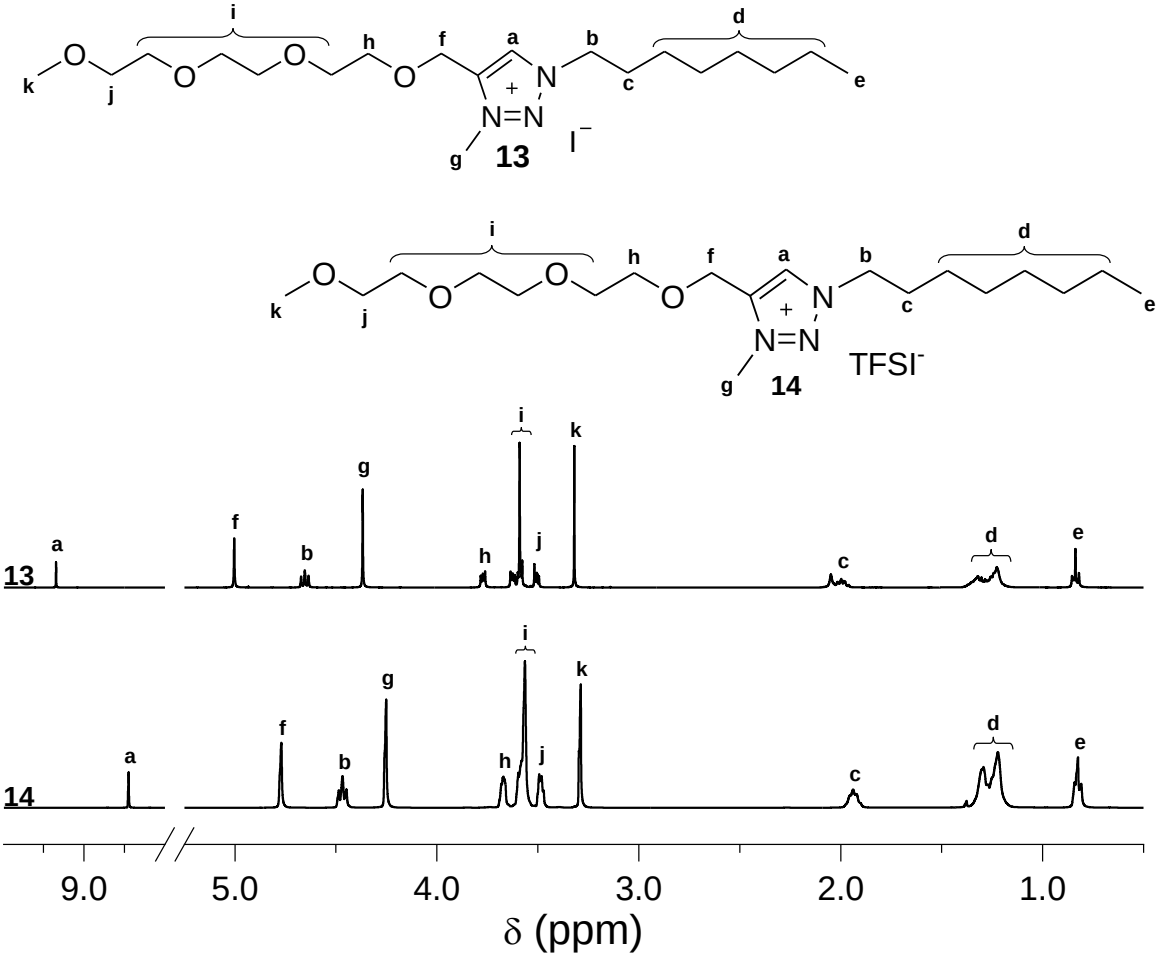


Figure S6. ^{1}H NMR spectra (400 MHz, 25 °C, $CDCl_3$) of 3-methyl-1,2,3-triazoliums **13** and **14**.

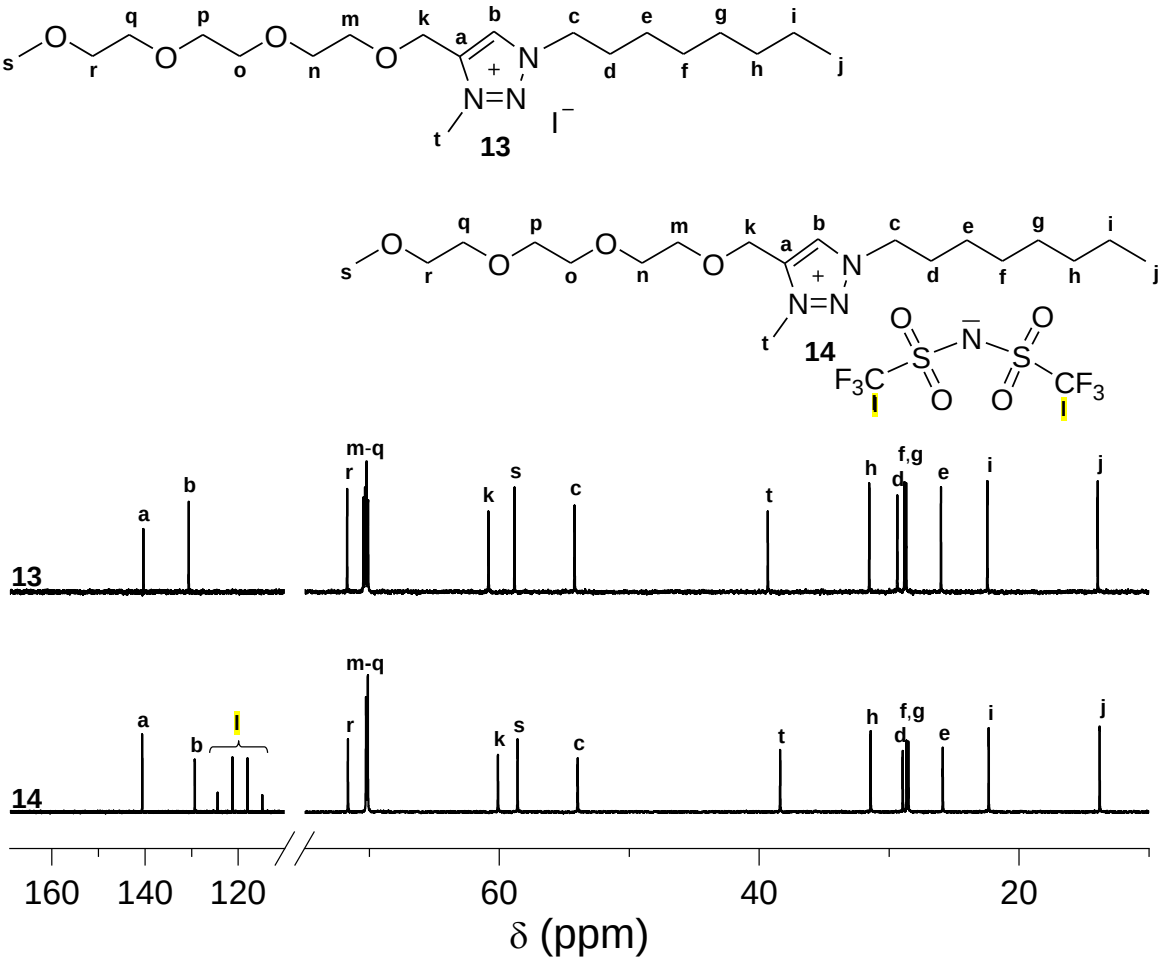


Figure S7. ^{13}C NMR spectra (100 MHz, 25 °C, $CDCl_3$) of 3-methyl-1,2,3-triazoliums **13** and **14**.

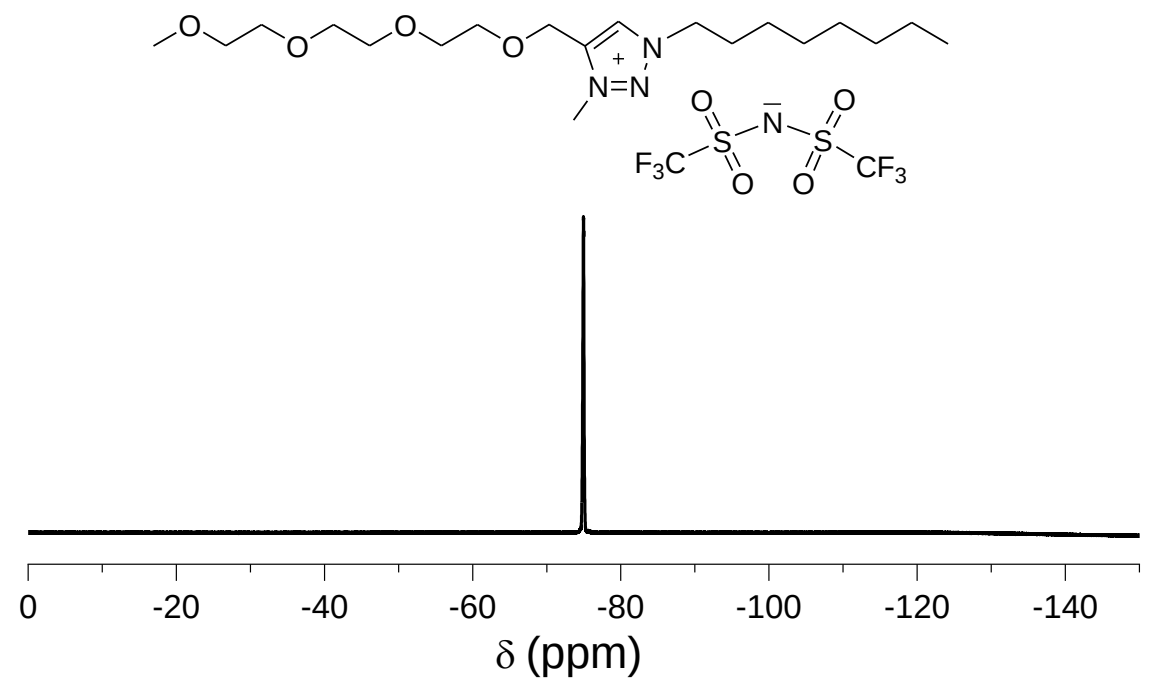


Figure S8. ^{19}F NMR spectrum (376 MHz, 25 °C, $CDCl_3$) of 3-methyl-1,2,3-triazolium **14**.

Table S1. Positive and negative modes ESI-HRMS characterization of 1,2,3-triazoles **6**-**9** and 1,2,3-triazoliums **10**-**14**.

Entry	Major peak	Charge (*z*)	Raw formula of ionic fragment	Theoretical mass (*m*/*z*)	Experimental mass (*m*/*z*)
6	$[M+H]^+$	+1	$C_{17}H_{26}N_3O$	288.2070	288.2067
7	$[M+H]^+$	+1	$C_{13}H_{26}N_3$	224.2121	224.2115
8	$[M+H]^+$	+1	$C_{21}H_{25}F_{17}N_3O$	658.1721	658.1714
9	$[M+H]^+$	+1	$C_{18}H_{36}N_3O_4$	358.2700	358.2709
10	$[C]^+$	+1	$C_{18}H_{28}N_3O$	302.2227	302.2222
	$[C^+ + 2I^-]^-$	–1	$C_{18}H_{28}I_2N_3O$	556.0327	556.0337
11	$[C]^+$	+1	$C_{14}H_{28}N_3$	238.2278	238.2273
	$[C^+ + 2I^-]^-$	–1	$C_{14}H_{28}I_2N_3$	492.0378	492.0377
12	$[C]^+$	+1	$C_{22}H_{27}F_{17}N_3O$	672.1877	672.1862
	$[C^+ + 2I^-]^-$	–1	$C_{22}H_{27}F_{17}I_2N_3O$	925.9978	925.9953
13	$[C]^+$	+1	$C_{19}H_{38}N_3O_4$	372.2857	372.2858
	$[C^+ + 2I^-]^-$	–1	$C_{19}H_{38}I_2N_3O_4$	626.0957	626.0975
14	$[C]^+$	+1	$C_{19}H_{38}N_3O_4$	372.2857	372.2854
	$[TFSI]^-$	–1	$C_2F_6NO_4S_2$	279.9178	279.9189

Table S2. VFT fitting parameters and ion conducting properties of 1,2,3-triazoliums **10**-**14**.

Entry	σ_∞ (S cm^{-1})[a]	B (K)[a]	T_0 (K)[a]	$T_g - T_0$ (K)[a]	σ_{DC} at 30 °C (S cm^{-1})[b]	σ_{DC} at 90 °C (S cm^{-1})[b]
10	0.55	1301	195	52	3.4×10^{-6}	2.4×10^{-4}
11	3.85	1406	173	36	8.0×10^{-5}	2.4×10^{-3}
12	/	/	/	/	2.6×10^{-9}	1.8×10^{-5}
13	1.30	1146	174	39	1.5×10^{-4}	2.4×10^{-3}
14	0.44	861	172	25	6.5×10^{-4}	4.8×10^{-3}

[a] Obtained from VFT fits of the experimental data. [b] Measured under anhydrous conditions by BDS.