

Supplementary Information for:

Unconventional poly(ionic liquid)s combining motionless main chain 1,2,3-triazolium cations and high ionic conductivity

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Table S1. Solubility of poly(1,2,3-triazole) **16** and poly(3-methyl-1,2,3-triazolium)s **19-21**.

Entry	H ₂ O ^[a]	Heptane	MeOH	EtOAc	Acetone	Et ₂ O	THF	CH ₂ Cl ₂	CHCl ₃	CH ₃ CN	PhCH ₃	DMF	DMSO
16	-	-	-	-	-	-	-	~	~	-	-	~	~
19	-	-	~	-	++	-	-	-	-	++	-	++	++
20	-	-	+	-	+	-	-	-	-	+	-	+	+
21	-	-	+	-	++	-	+	-	-	++	-	++	++

[a] “++” indicates solubility at 10 mg mL⁻¹, “+” indicates solubility at 1 mg mL⁻¹, “~” indicates partial solubility at 1 mg mL⁻¹, while “-” indicates no detectable solubility even at 1 mg mL⁻¹.

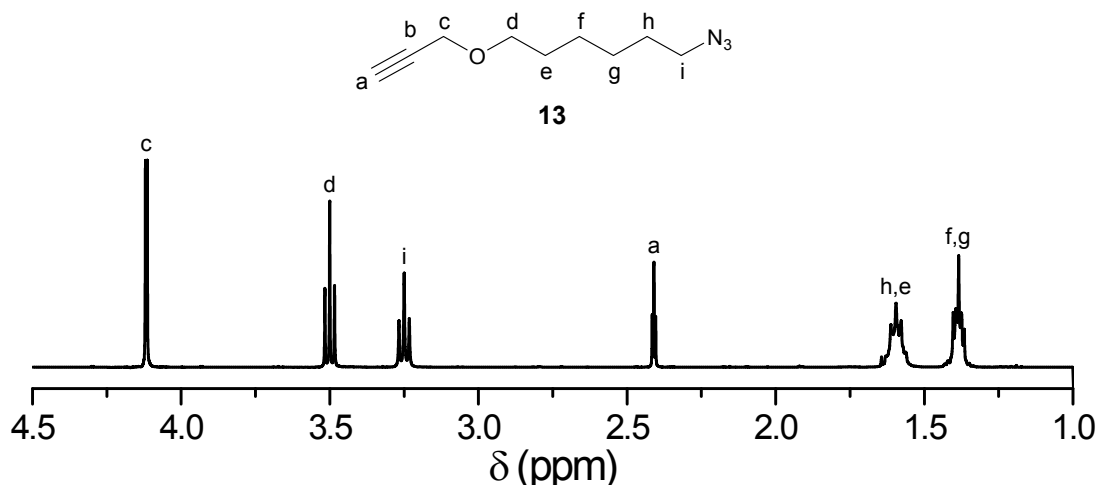


Figure S1. ¹H NMR (CDCl₃, 400 MHz) of α-azide-ω-alkyne monomer **13**.

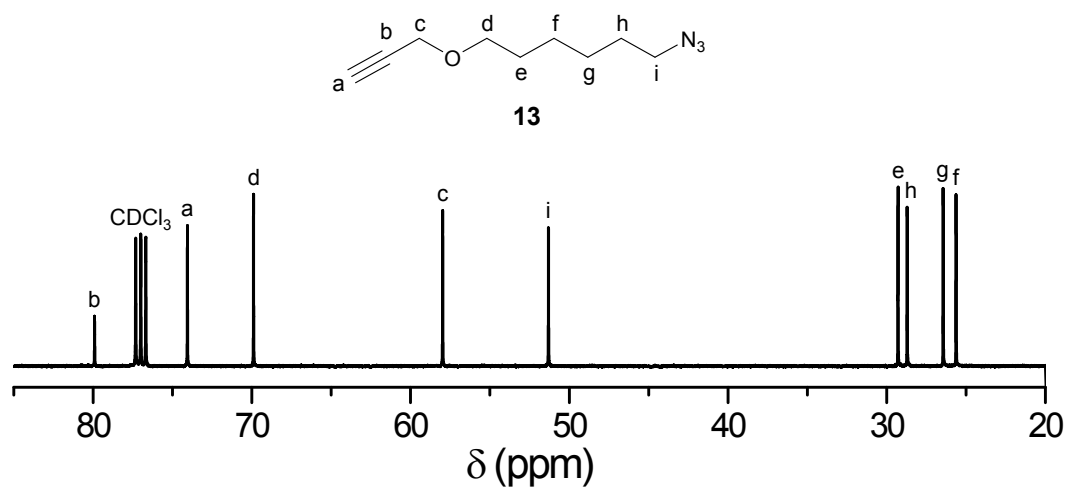


Figure S2. ^{13}C NMR (CDCl_3 , 400 MHz) of α -azide- ω -alkyne monomer **13**.

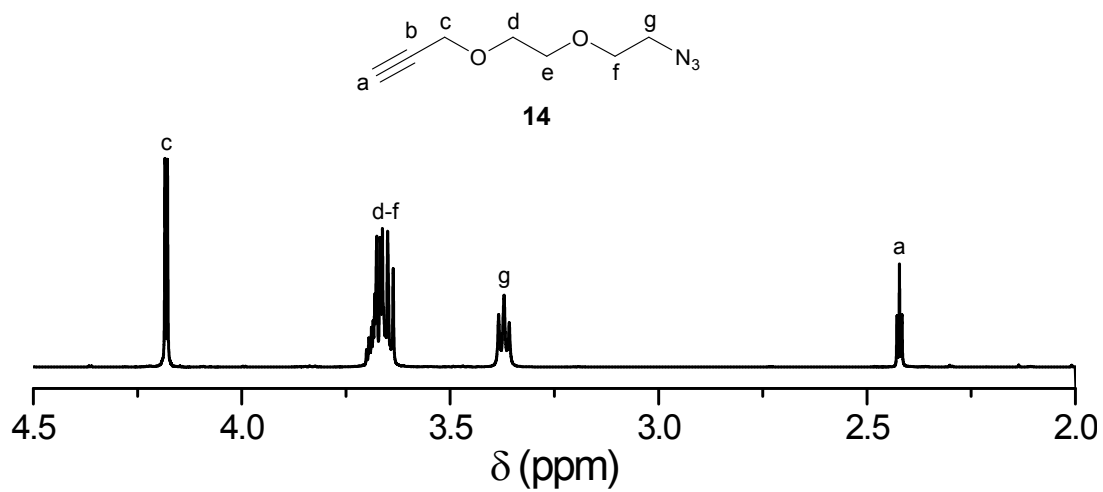


Figure S3. ^1H NMR (CDCl_3 , 400 MHz) of α -azide- ω -alkyne monomer **14**.

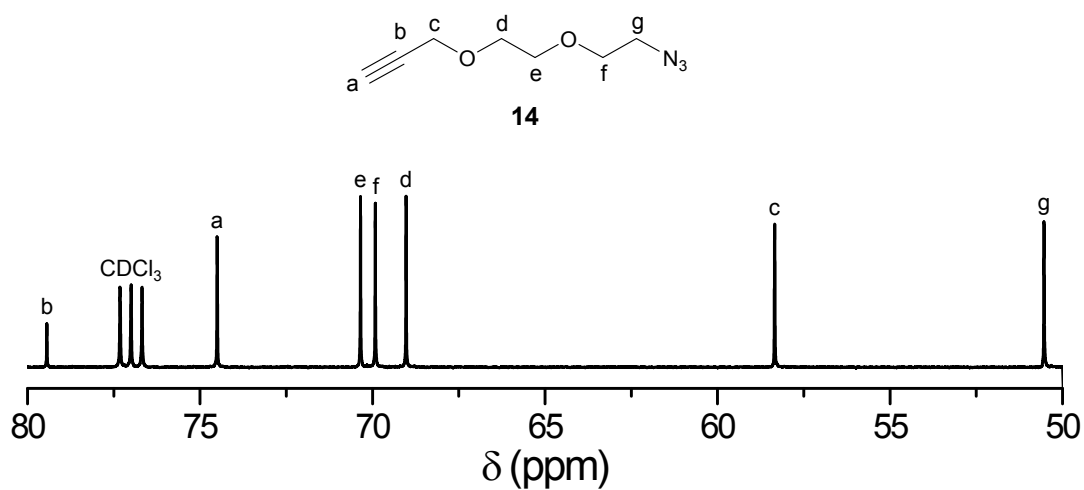


Figure S4. ^{13}C NMR (CDCl_3 , 400 MHz) of α -azide- ω -alkyne monomer **14**.

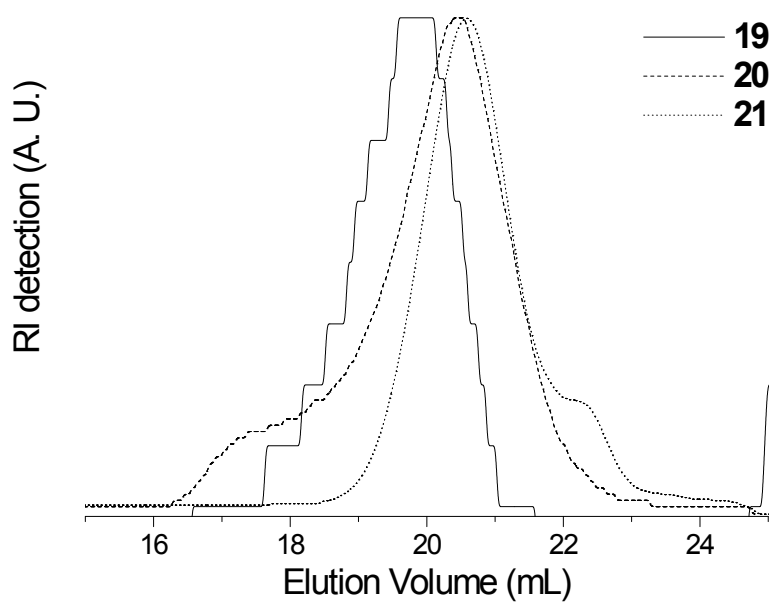


Figure S5. SEC traces (50 °C, DMF 0.01 M LiTFSI) of poly(1,2,3-triazolium)s **19-21**.

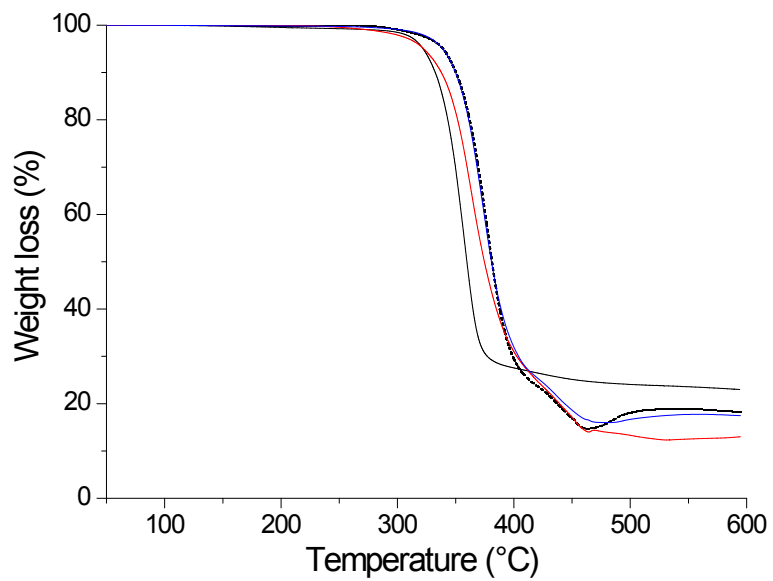


Figure S6. TGA of poly(1,2,3-triazole) **16** (black solid line) and poly(1,2,3-triazolium)s **19** (black dashed line), **20** (red solid line) and **21** (blue solid line).