Electronic Supplementary Information (ESI) for

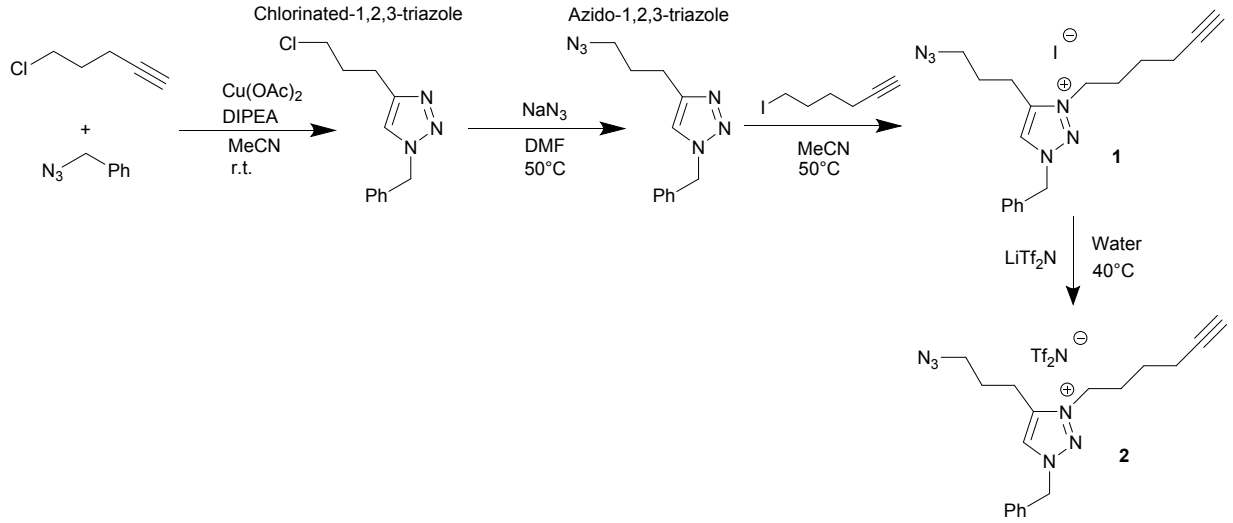
One-pot synthesis of poly(ionic liquids) with 1,2,3-triazolium-based backbones via clickable ionic liquid monomers

Ruka Hirai, Tatsuki Hibino, Takaichi Watanabe, Takashi Teranishi, and Tsutomu Ono*

Department of Applied Chemistry, Graduate School of Natural Science, Okayama University, 3-1-1, Tsushima-naka, Kita-ku, Okayama 700-8530, Japan

* Email: tono@okayama-u.ac.jp, Phone & Fax: +81-86-251-8083

Scheme S1. Synthesis of α-azide-ω-alkyne ionic liquid monomers **1** and **2**.



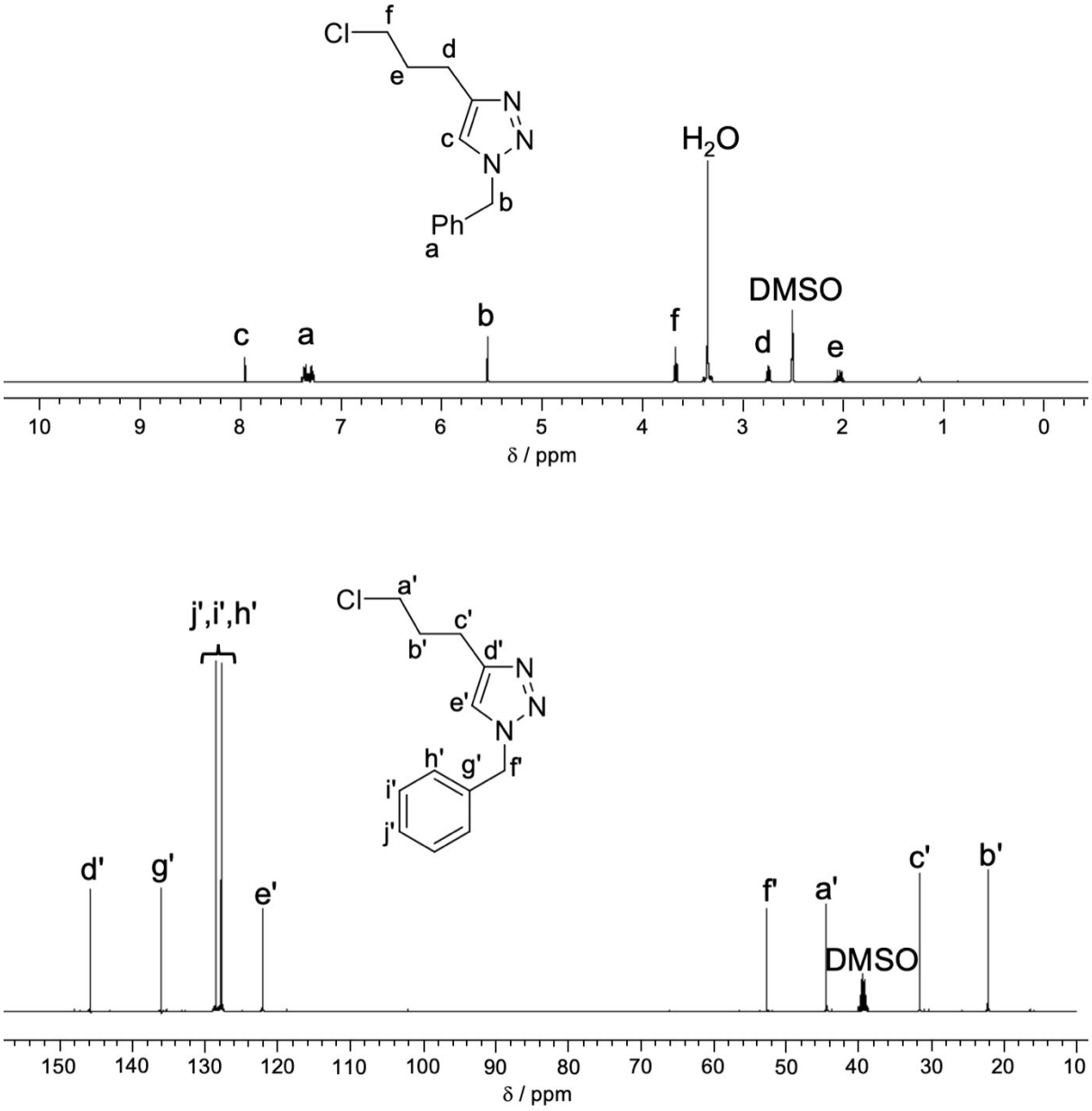


Fig. S1 ^{1}H and ^{13}C NMR spectra of chlorinated-1,2,3-triazole (DMSO-d_6).

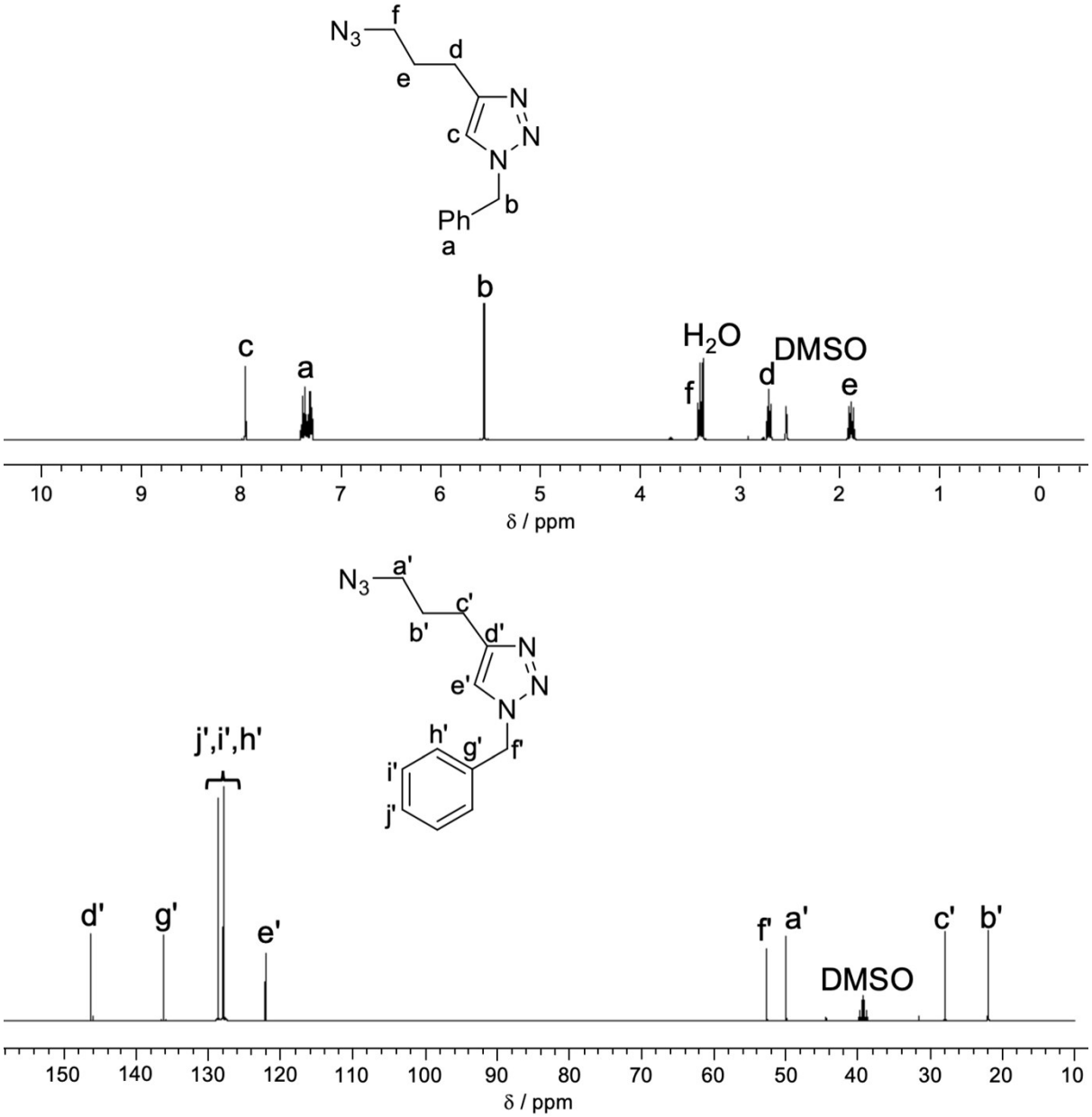


Fig. S2 ^{1}H and ^{13}C NMR spectra of azido-1,2,3-triazole (DMSO-d_6).

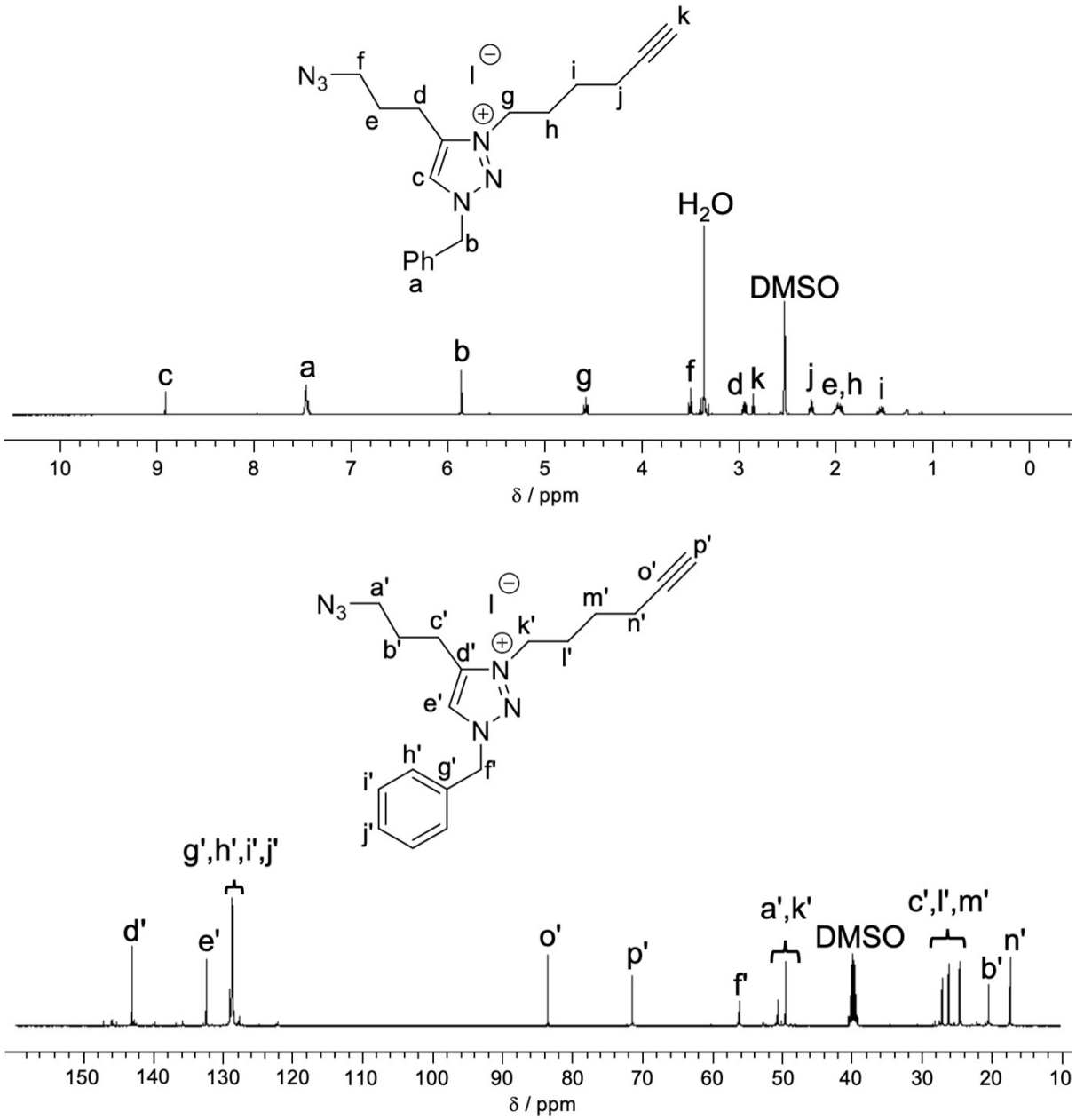


Fig. S3 ^{1}H and ^{13}C NMR spectra of α-azide-ω-alkyne IL monomer **1** (DMSO-d_6).

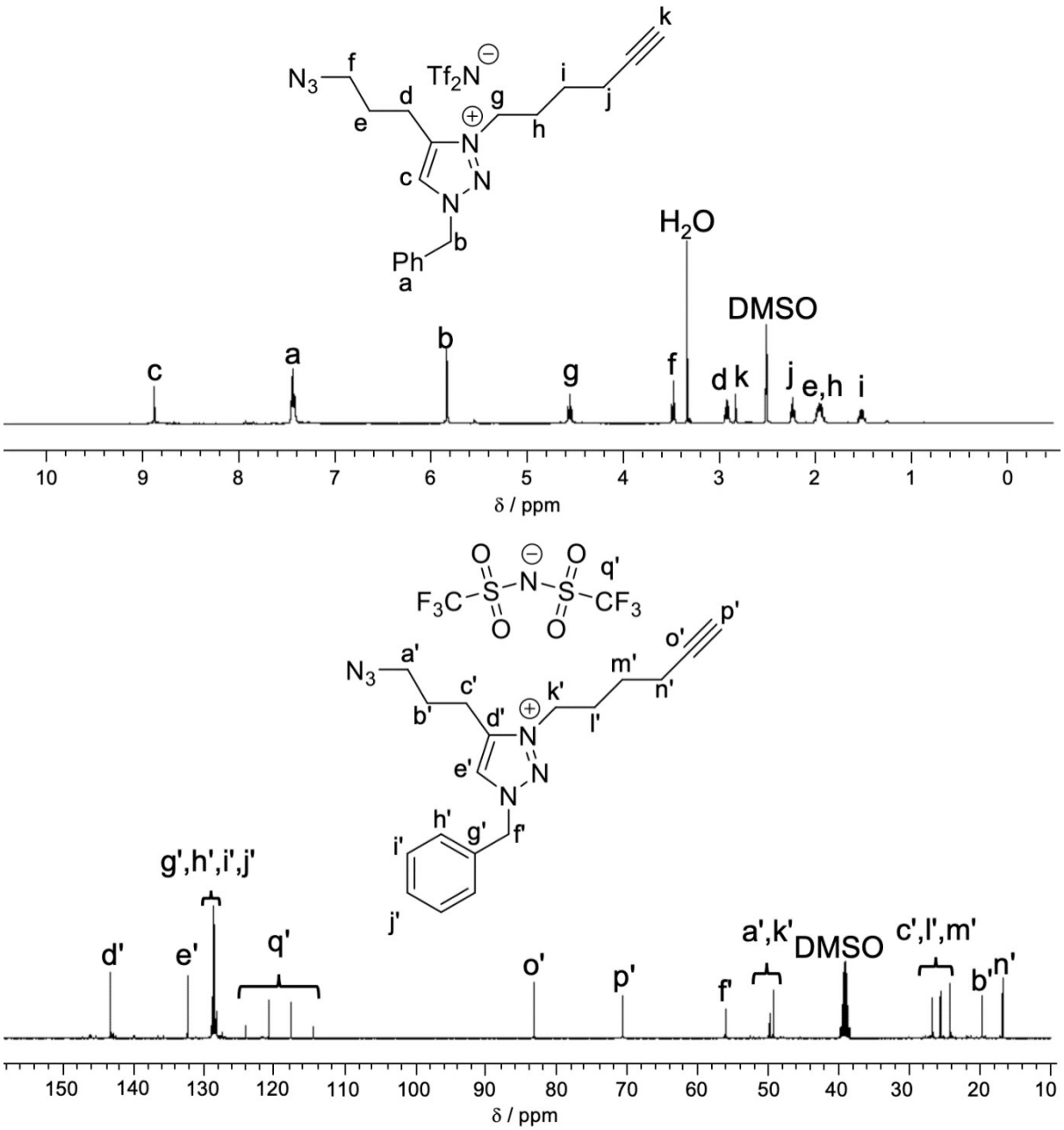


Fig. S4 ^{1}H and ^{13}C NMR spectra of α-azide-ω-alkyne IL monomer **2** (DMSO-d_6).

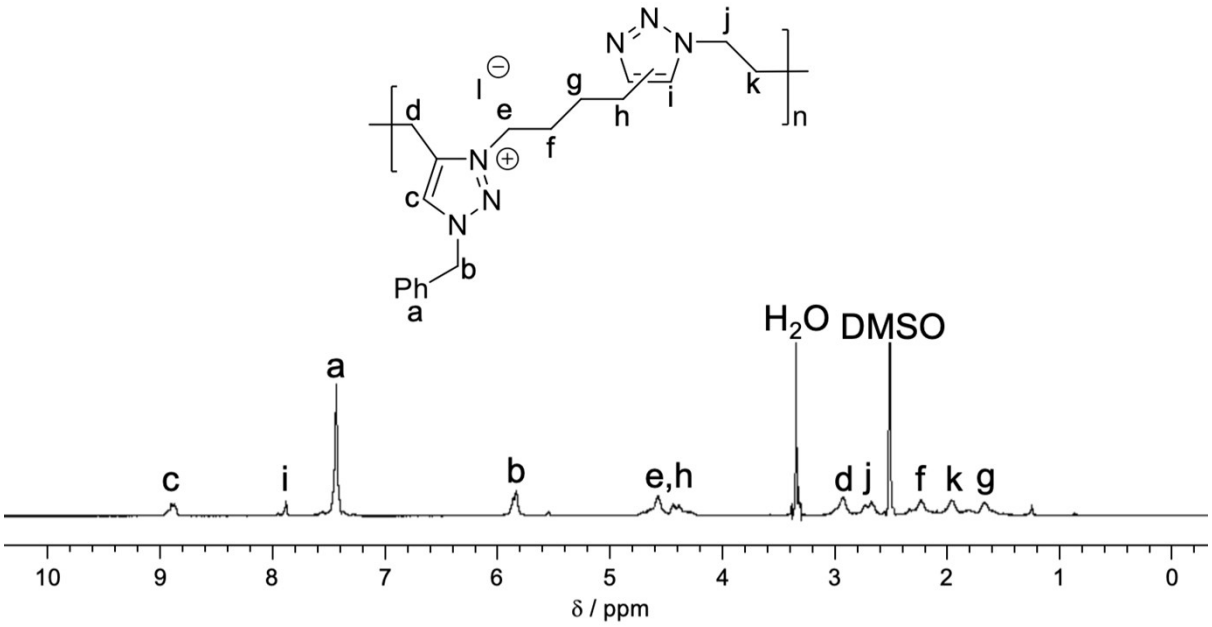


Fig. S5 ^{1}H NMR spectrum of TPIL **3** (DMSO-d_6).

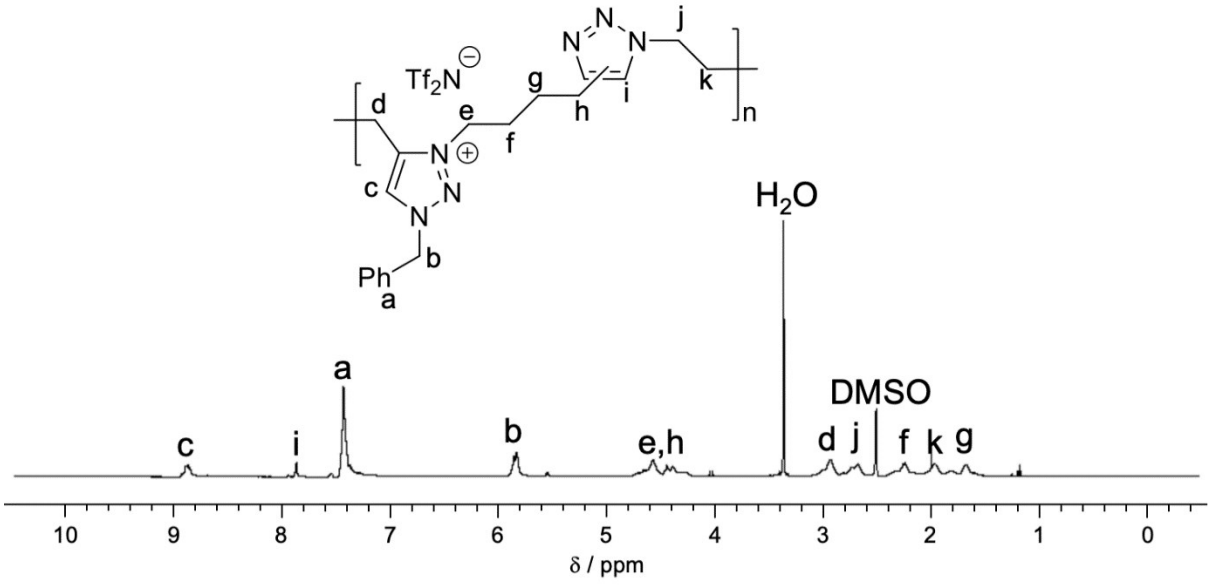


Fig. S6 ^{1}H NMR spectrum of TPIL **4** (DMSO-d_6).

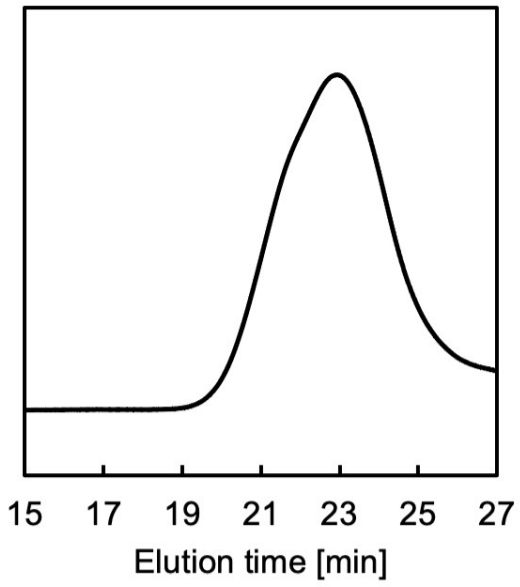


Fig. S7 GPC trace of TPIL **4**.

Table S1. Solubility of IL monomers **1** and **2** and TPILs **3** and **4**.

	Solubility							
	H_2O	Acetone	Et_2O	MeOH	CH_2Cl_2	MeCN	DMF	DMSO
1	+	+	–	+	+	+	+	+
2	–	+	–	+	+	+	+	+
3	–	–	–	–	–	–	+	+
4	–	+	–	–	–	+	+	+

"+" indicates solubility, "–" indicates no detectable solubility at 1 mg mL^{-1}.

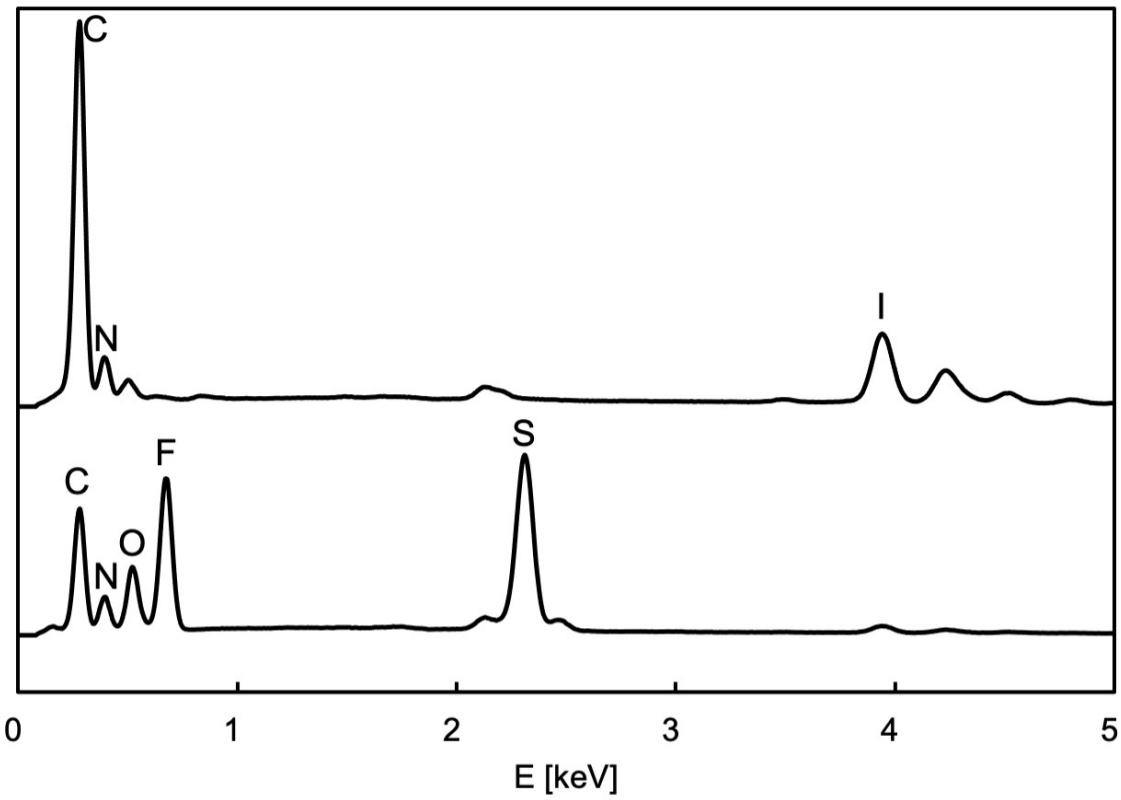


Fig. S8 EDX analysis of cross-linked TPIL with I anions (upper) and Tf_2N anions (bottom).

Table S2. Quantitative analysis results of EDX for cross-linked TPIL with Tf_2N anions.

Elements	S	I
[%]	93.56	6.41