technologies

MDPI

Supplementary Material for

Fluorine-Free Single-Component Polyelectrolyte of Poly(ethylene glycol) Bearing Lithium Methanesulfonylsulfonimide Terminal Groups: Effect of Structural Variance on Ionic Conductivity

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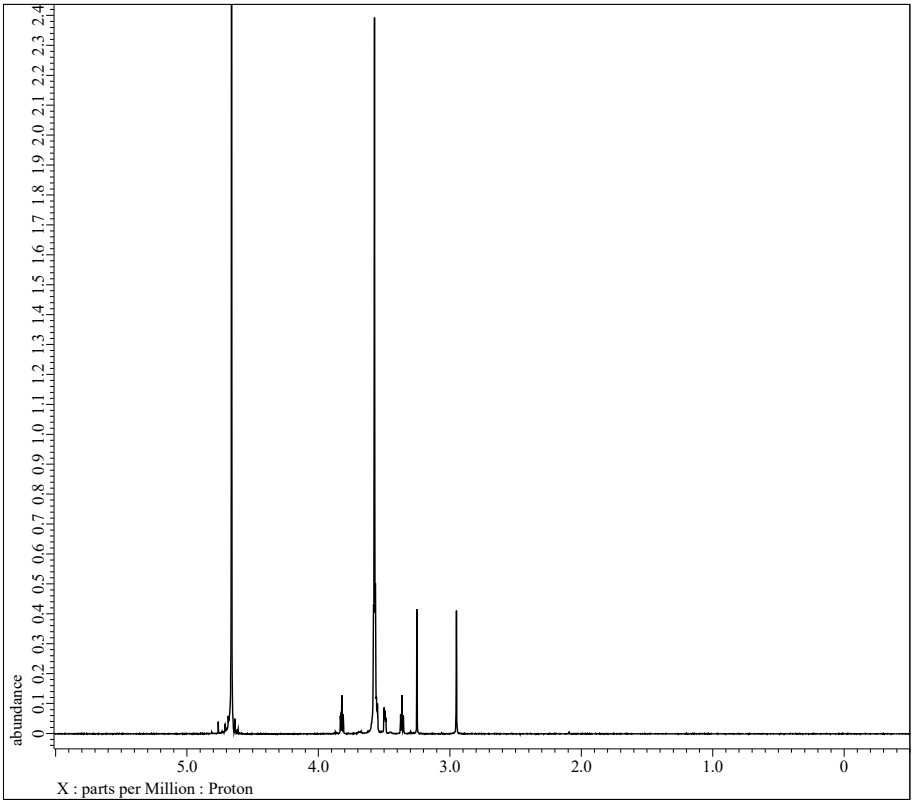

Figure S1. ^{1}H NMR spectrum of PEG400MME-LiMSSI1.

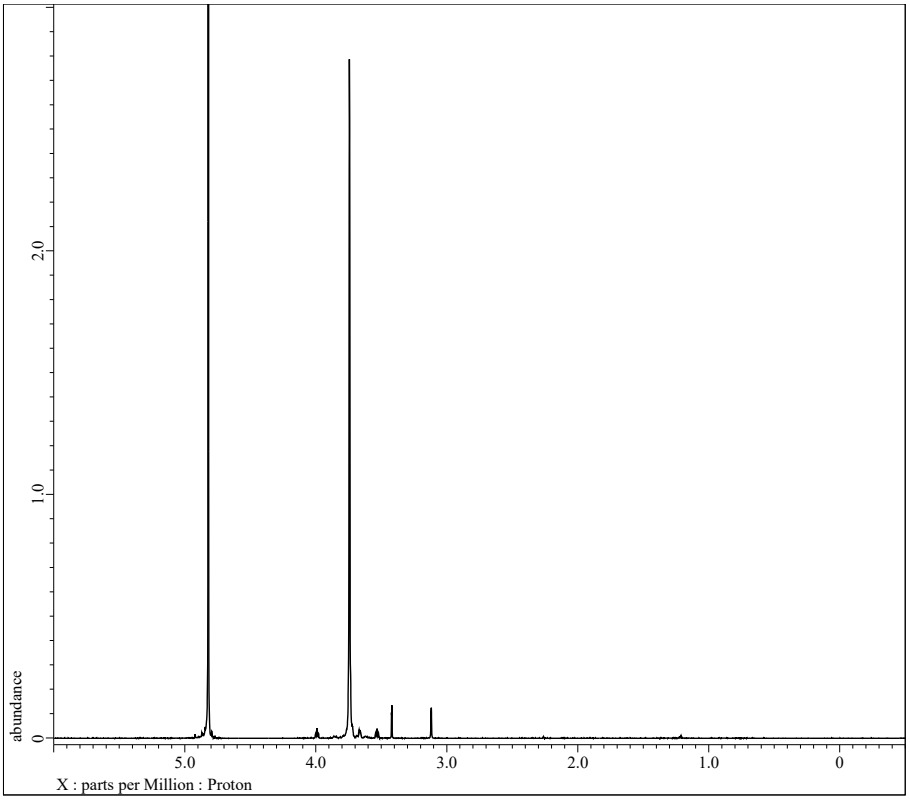

Figure S2. ^{1}H NMR spectrum of PEG1000MME-LiMSSI1.

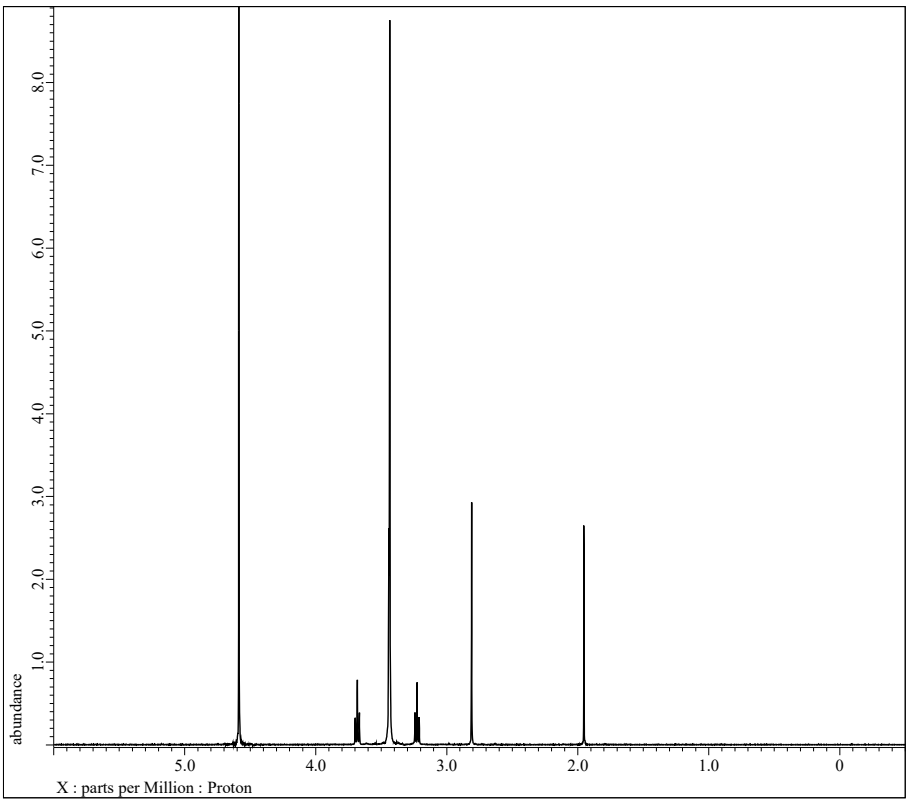

Figure S3. ^{1}H NMR spectrum of PEG400-LiMSSI2.

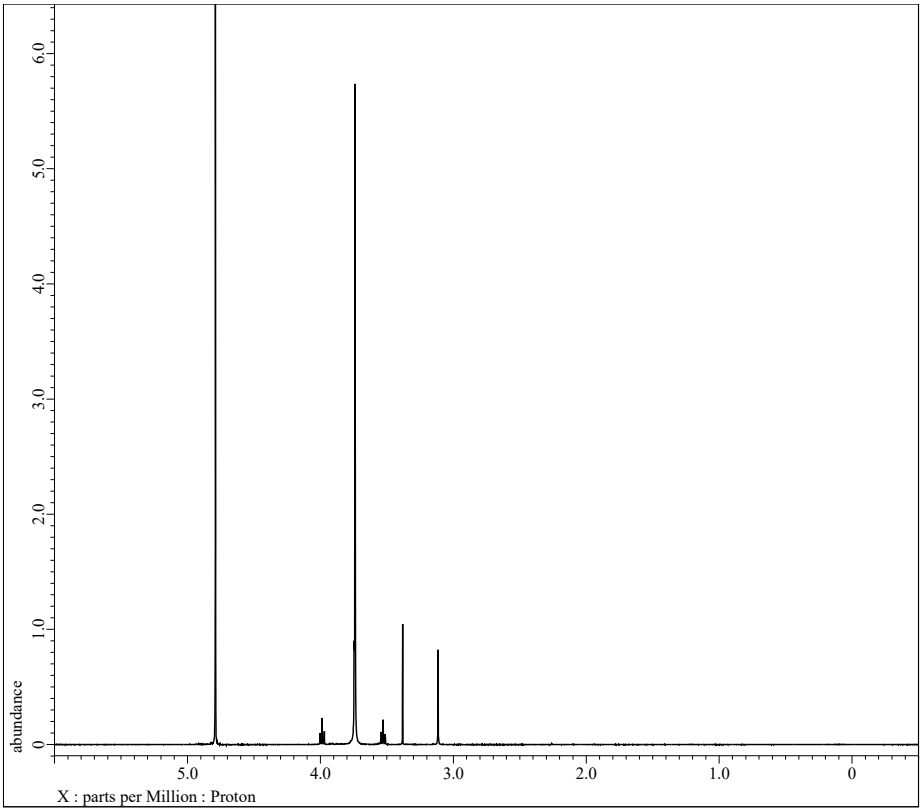

Figure S4. ^{1}H NMR spectrum of PEG1000MME-LiMSSI2.

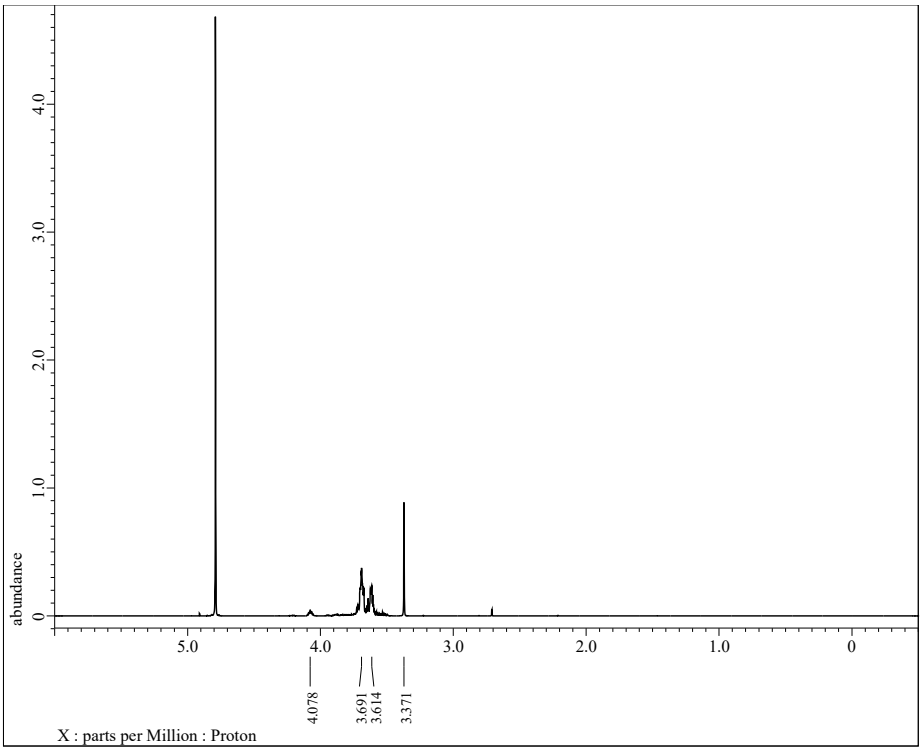

Figure S5. ^{1}H NMR spectrum of DEGMME-LiMSSI2.

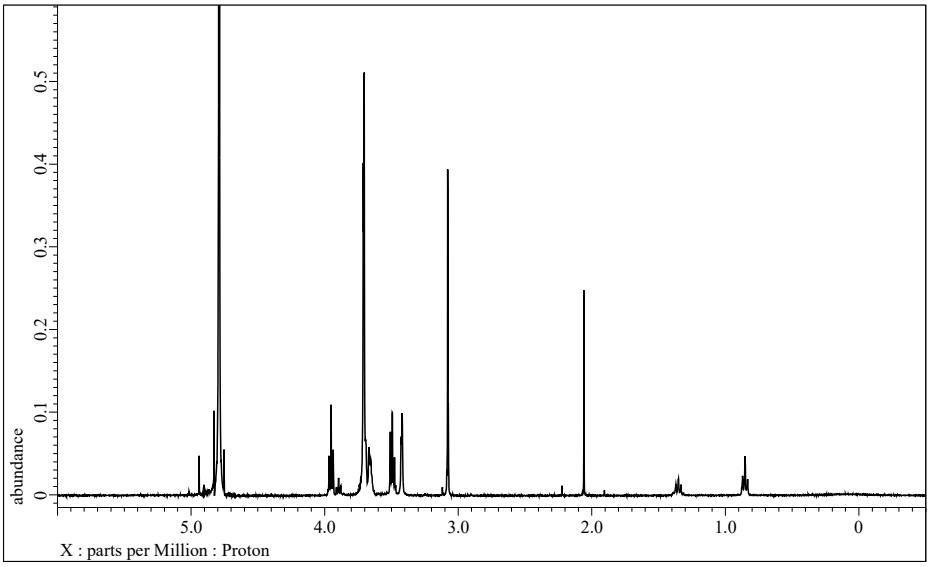

Figure S6. ^{1}H NMR spectrum of TPME450-LiMSSI3.

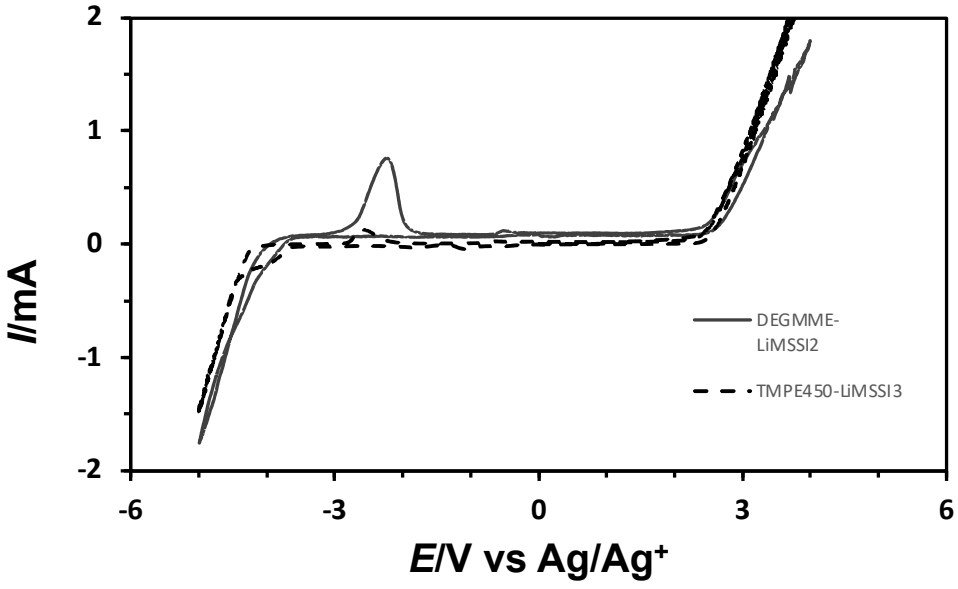

Figure S7. Cyclic voltammograms of DEGMME-LiMSSI2 (plain) and TPME450-LiMSSI3 (dashed) in 1.0 M EC/DEC (v/v = 3/7) solution of LiTFSI; reference electrode, Ag/Ag^{+}; working electrode, Pt disk (φ = 1.6 mm); counter electrode, Pt wire (φ = 0.5 mm); sweep rate = 0.1 V/s).

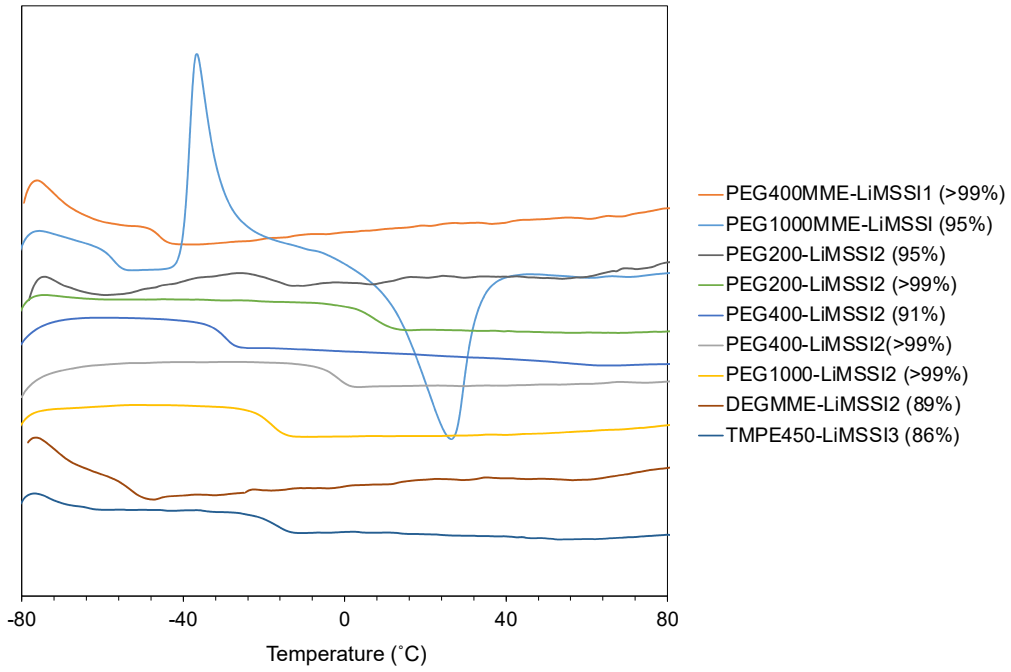

Figure S8. DSC curves of polyelectrolytes (10 °C/min, second heating scan, N_2).

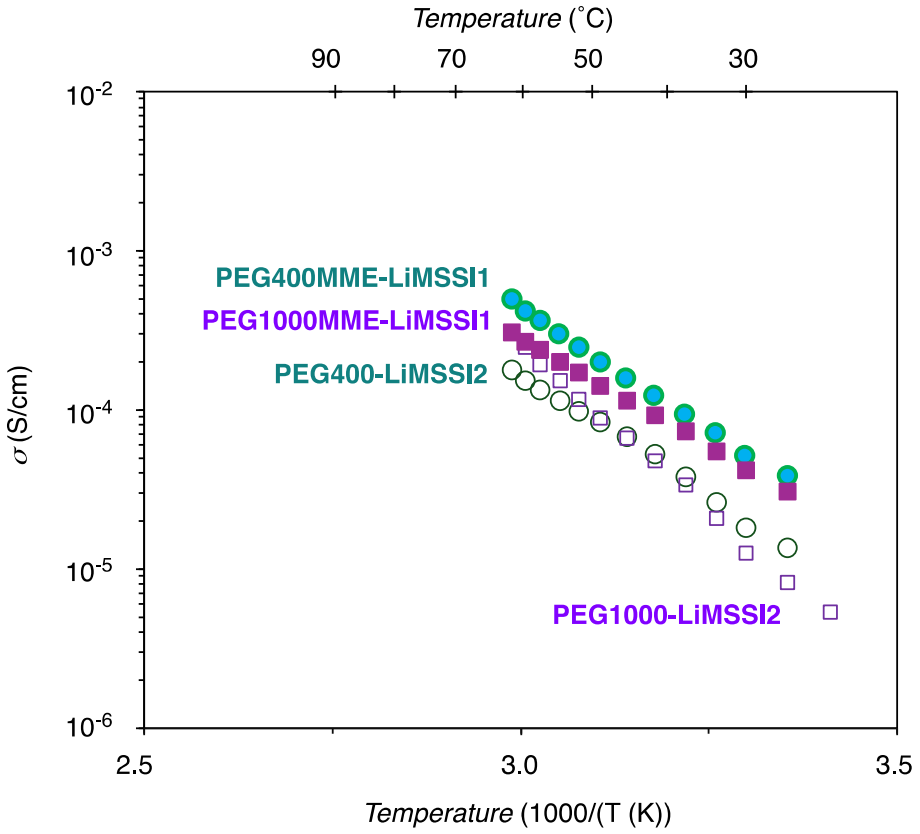

Figure S9. Ionic conductivity of PEG400-LiMSSI1 (green closed circle), PEG1000MME-LiMSSI1 (purple closed square), PEG400-LiMSSI2 (green open circle), and PEG1000-LiMSSI2 (purple open square) after drying at 90 ˚C for 2 h under a nitrogen atmosphere.