

Supplementary information

Combination of organic cation and cyclic sulfonamide anion exhibiting plastic crystalline behavior in a wide temperature range

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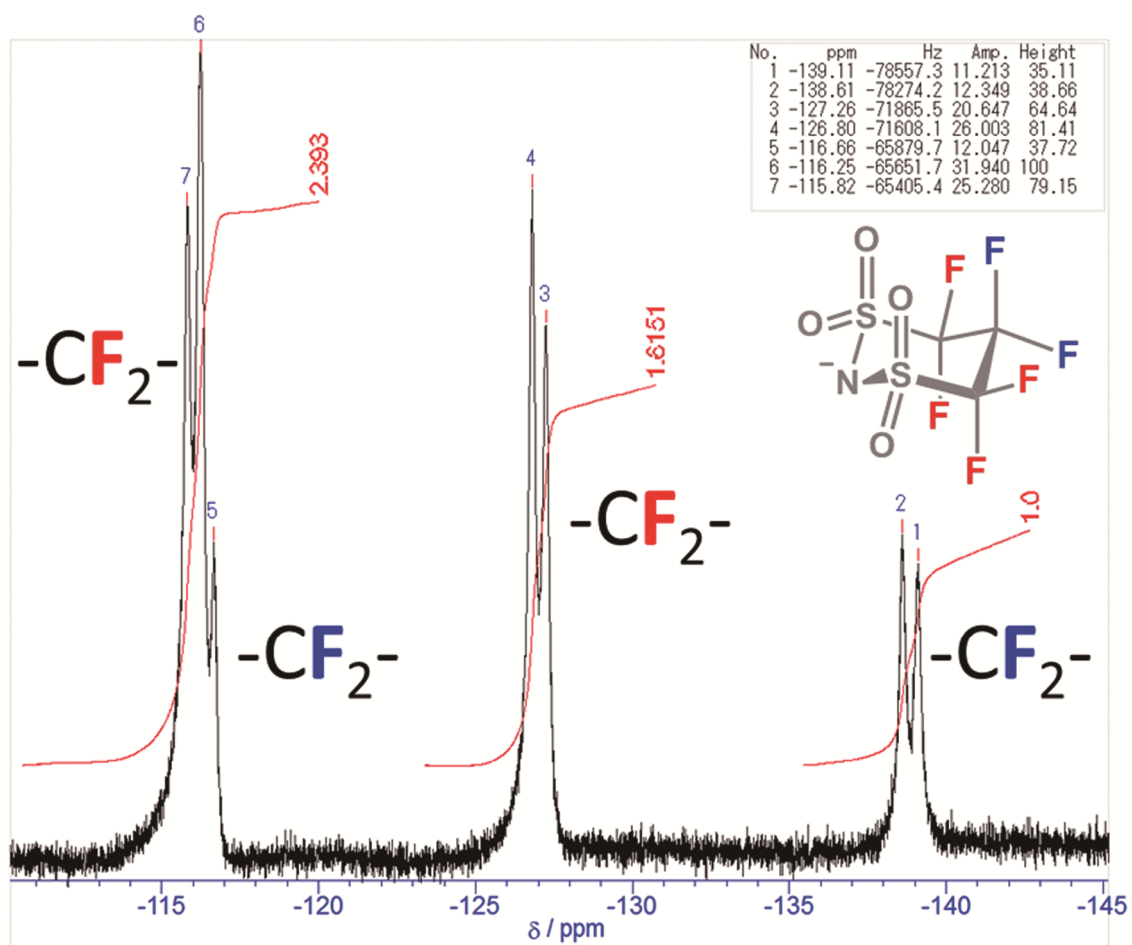


Figure S1. ^{19}F NMR spectrum of $[\text{N}_{1111}][\text{CPFSA}]$ in CD_3OD at -80°C .

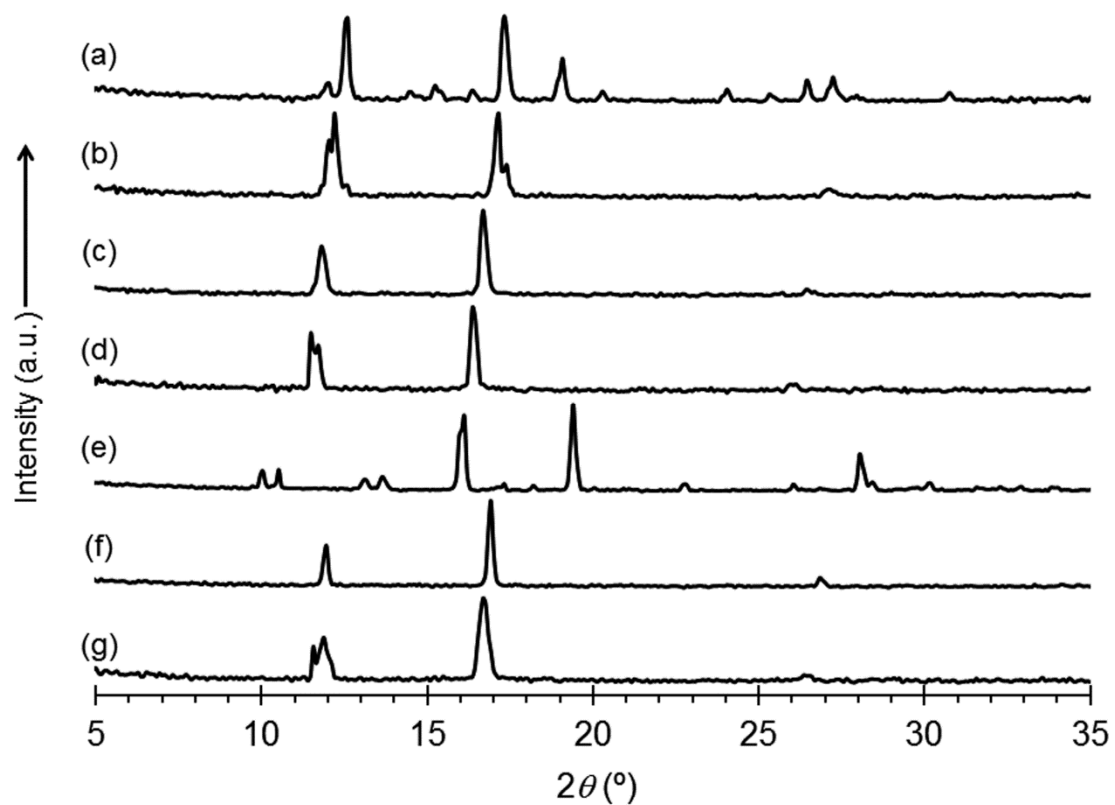


Figure S2. XRD patterns of the obtained compounds measured at room temperature. (a) [N₁₁₁₁][CPFSA], (b) [N₁₁₁₂][CPFSA], (c) [N₁₁₂₂][CPFSA], (d) [N₁₂₂₂][CPFSA], (e) [N₂₂₂₂][CPFSA], (f) [Py_{r11}][CPFSA], (g) [Py_{r12}][CPFSA].

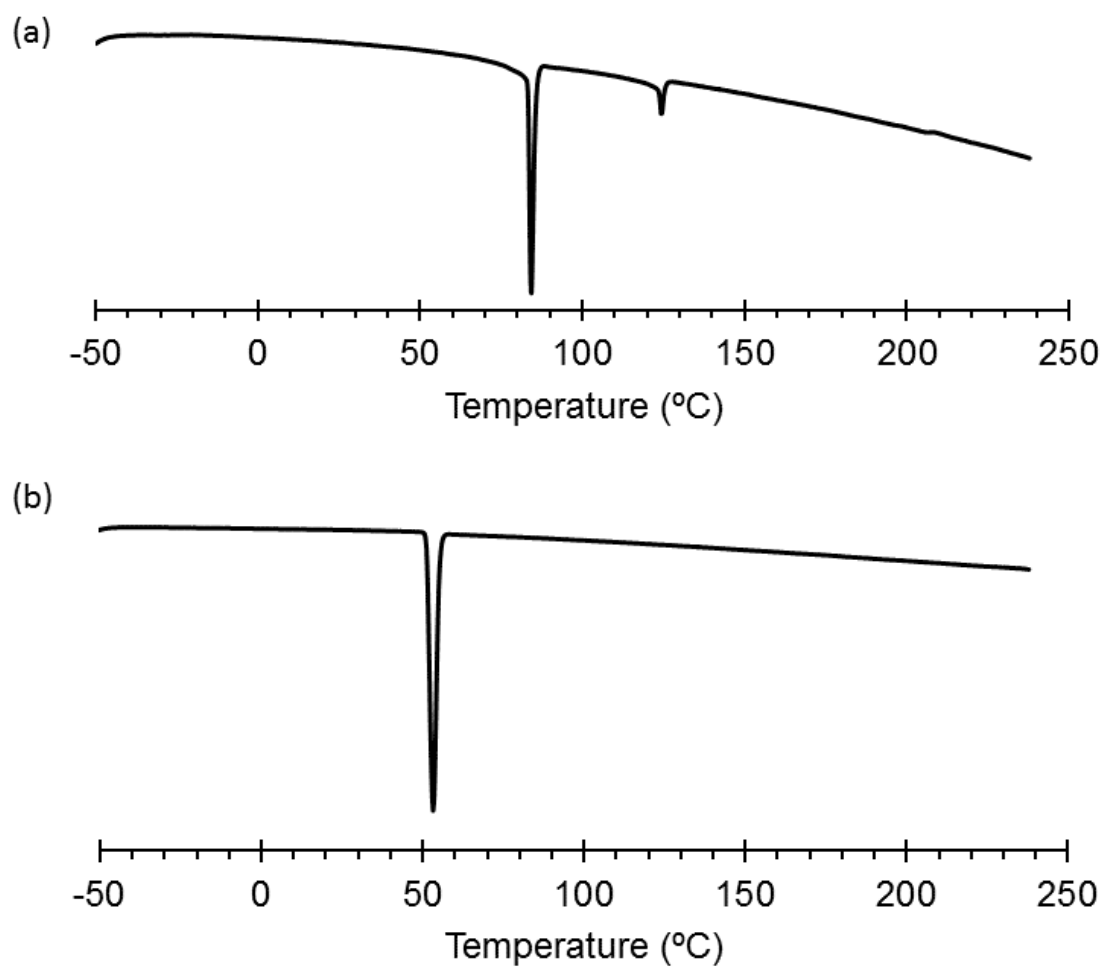


Figure S3. DSC curves of the obtained OIPCs. (a) $[N_{1111}][CPFSA]$, (b) $[N_{2222}][CPFSA]$.

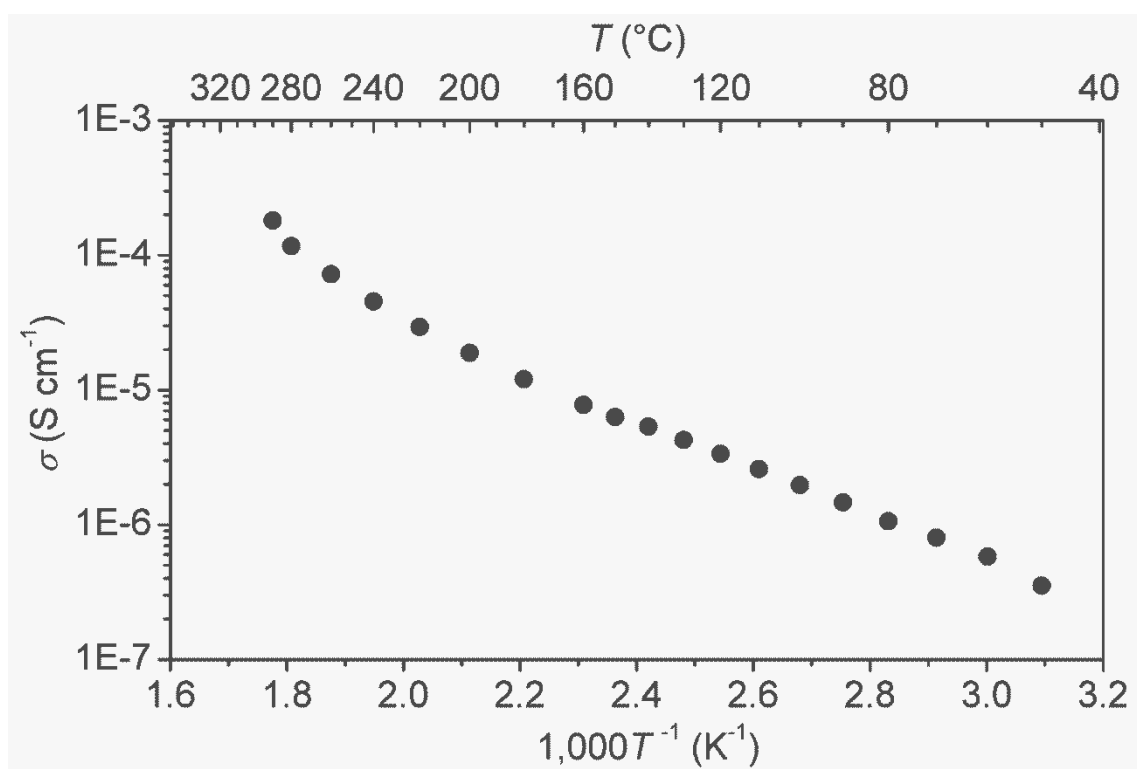


Figure S4. Solid state ionic conductivities of [N₁₁₂₂][CPFSA] (solid circle) as a function of temperature from 50 to 290 °C.