Supporting Information

Ionic Liquids and Plastic Crystals Utilising the Oxazolidinium Cation: The Effect of Ether Functionality in the Ring

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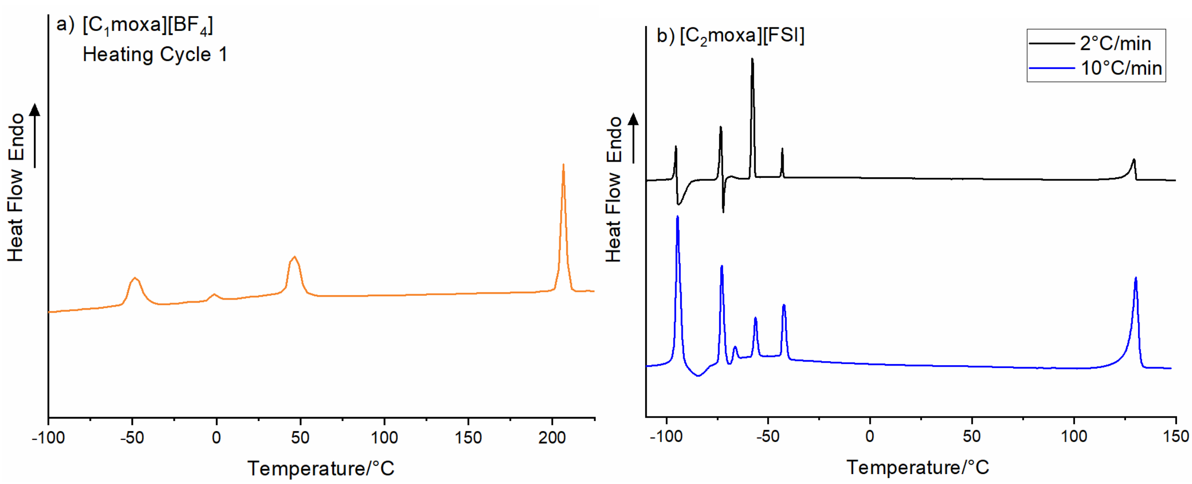
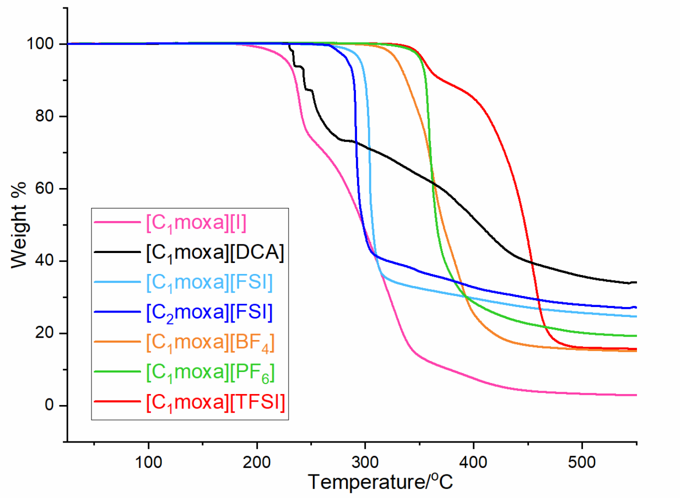


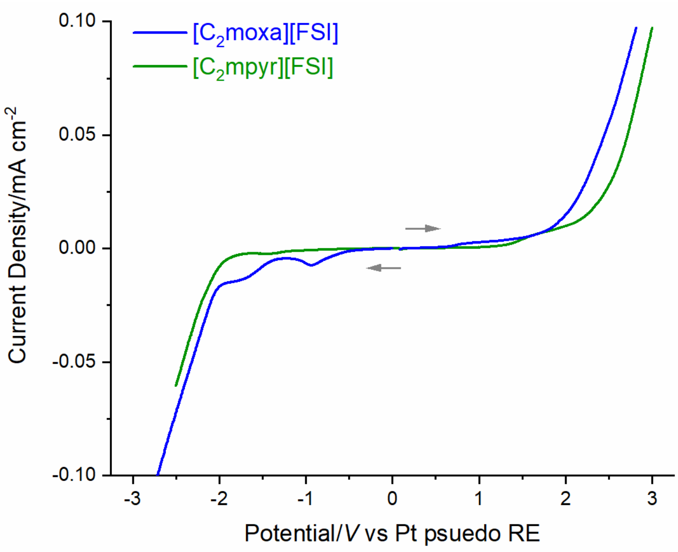
Supporting Figure S1: DSC trace of a) [C_1moxa][BF_4] at 10 °C min^{-1} on the first heating cycle, and b) [C_2moxa][FSI] at 10°C min^{-1} and 2°C min^{-1}.



Supporting Figure S2: Thermal gravimetric analysis of oxazolidinium-based salts.

Supporting Table S1: Comparison of thermal properties and ionic conductivity of oxazolidinium and pyrrolidinium-based salts. (T_m ± 1°C, ΔS_f ± 10% and conductivity ± 5% for the data measured in the current work)

Salt	**T_m /°C**	**ΔS_f /J K^{-1} mol^{-1}**	**$T_{d(onset)}$ /°C**	**Conductivity at 30 °C /S cm^{-1}**
[C_1moxa][DCA]	15	11	230	1.4 × 10^{-2} (melt)
[C_1mpyr][DCA][1]	115	19	-	4.0 × 10^{-7} (phase I)
[C_1moxa][TFSI]	72	24	340	2.3 × 10^{-7} (phase I)
[C_1mpyr][TFSI][2]	132	40	-	2.0 x 10^{-9} (25°C, phase I)
[C_1moxa][BF_4]	204	12	323	3.8 × 10^{-7} (phase II)
[C_1mpyr][BF_4][3,4]	>340	n/a	340	1.0 × 10^{-7} (phase III)
[C_1moxa][PF_6]	>343	n/a	343	2.7 ×10^{-9} (phase I)
[C_1mpyr][PF_6][5]	>390	n/a	390	n/a
[C_1moxa][FSI]	197	4	290	5.8 x 10^{-7} (phase I)
[C_1mpyr][FSI][6]	286	14	304	2.0 x 10^{-8} (phase I)
[C_2moxa][FSI]	127	7	280	5.7 x 10^{-6} (phase I)
[C_2mpyr][FSI][6]	205	11	299	1.5 x 10^{-6} (phase I)



Supporting Figure S3: Cyclic voltammetry of [C_1moxa][FSI] and [C_2mpyr][FSI] at 70°C at a scan rate of 2 mV s^{-1}, on a Pt working electrode, Pt coil counter electrode and Pt pseudo reference electrode. For clarity, only the forward sweep is shown.

References

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