

Comparative Study of the Intermolecular Dynamics of Imidazolium-Based Ionic Liquids with Linear and Branched Alkyl Chains: OHD-RIKES Measurements

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Electronic Supporting Information

Table S1. Fitting parameters for the RSD multicomponent line shape analysis

	1mC ₂ C ₁	2mC ₃ C ₁	3mC ₄ C ₁	4mC ₅ C ₁	5mC ₆ C ₁	C ₂ C ₁	C ₃ C ₁	C ₄ C ₁	C ₅ C ₁	C ₆ C ₁	C ₇ C ₁
a _{BL}	0.09	0.10	0.06	0.092	0.096	0.105	0.097	0.09	0.09	0.10	0.09
a	1.23	1.17	1.31	1.18	1.18	1.18	1.22	1.22	1.20	1.17	1.19
w _{BL}	15.01	13.79	16.21	16.00	15.01	14.44	13.28	14.47	16.17	15.09	14.96
aG ₁	0.378	0.54	0.57	0.54	0.64	0.22	0.50	0.60	0.52	0.63	0.65
wG ₁	54.24	54.85	65.96	60.45	61.92	52.03	54.03	61.17	60.01	63.50	61.44
e ₁	18.85	24.09	22.02	19.85	23.03	16.19	26.54	23.20	19.16	21.07	22.15
aG ₂	0.67	0.66	0.78	0.72	0.56	0.79	0.74	0.73	0.76	0.57	0.61
wG ₂	88.93	102.12	105.69	95.80	99.82	84.07	98.16	102.87	96.92	97.94	101.06
e ₂	26.01	25.92	21.63	21.07	21.73	28.91	27.58	23.49	21.21	18.49	21.32
aG ₃	0.17	0.27	0.13	0.21	0.14	0.17	0.22	0.16	0.23	0.20	0.15
wG ₃	121.85	122.28	122.77	122.61	121.38	123.33	122.98	122.04	123.00	122.60	122.96
e ₃	6.12	7.42	5.25	6.61	6.24	7.16	6.98	6.10	7.08	7.31	6.36
aG ₄	0.42	0.15	0.019	0.15	0.21	0.22	0.13	0.08	0.16	0.25	0.16
wG ₄	142.62	134.42	132.77	136.77	134.42	155.87	138.06	133.47	138.52	136.00	135.13
e ₄	11.86	9.48	4.98	11.59	11.15	18.13	9.15	8.69	10.05	14.72	13.56
aG ₅	0.16	0.10	0.12	0.19	0.14	0.08	0.15	0.15	0.20	0.13	0.14
wG ₅	167.45	171.72	173.04	170.05	169.79	170.77	166.79	170.45	168.35	170.56	170.90
e ₅	14.88	14.42	15.39	14.46	18.86	21.08	15.53	17.69	14.89	11.06	16.58
aG ₆	0.08	0.10	0.07	0.06	0.09	0.06	0.06	0.074	0.065	0.05	0.08
wG ₆	206.10	216.41	209.25	211.21	214.60	209.35	221.50	212.13	212.54	209.72	213.26
e ₆	12.38	12.25	12.33	11.32	11.39	9.17	16.71	9.26	16.15	14.52	10.37
aG ₇	0.10	--	0.027	0.05	--	0.09	--	--	--	--	0.02
wG ₇	242.74	--	239.44	227.65	--	242.84	--	--	--	--	231.33
e ₇	12.15	--	6.30	5.48	--	12.9	--	--	--	--	5.76

^aa_L, w_{BL}, a – Bucaro-Litowitz parameters (ABL, ω_{BL}, a in eq 5-1 of text) ; aG, wG, e – Antisymmetrized-Gaussian parameters (AAG ωAG, ε in eq 5-2 of text).

Figure S1. Reduced spectral density (height-normalized) of $[\text{C}_2\text{C}_1\text{im}][\text{NTf}_2]$ in the $0\text{-}450\text{ cm}^{-1}$ range obtained by applying the Fourier-transform-deconvolution procedure to the reduced response of the corresponding OHD-RIKES signal.

