## Ionic Liquids Confined in Silica Ionogels: Structural, Thermal and Dynamical Behaviors

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**Figure S1.** Variation of measured elastic intensity with Q at different temperatures for a methylated *x* = 0.5 ionogel.

**Table S1.** Position of diffraction peak and corresponding intensity at different temperatures for ionogel with IL content of x = 0.5.

Q(Å)	Int. for 200 K	Int. for 220 K	Int. for 236 K	Int. for 245 K
0.73	101044	101275	93162	74602
0.82	70013	68274	67847	66809
0.91	68834	68707	67116	65577
1.10	71754	71182	69535	66781
1.14	71373	71827	70477	66713
1.26	70784	71549	70057	67012
1.32	72651	72454	71242	68167
1.36	80845	81587	78118	70407
1.40	70225	69675	69089	67424



**Figure S2.** Quasielastic spectra for the bulk BMI TFSI at 300 K (incoming wavelength = 5.2 Å, *R*<sub>FWHM</sub> = 150 µeV).



**Figure S3.** Quasielastic spectra for the non-methylated x = 0.25 ionogel at 300 K (incoming wavelength = 5.2 Å, *R*<sub>FWHM</sub> = 150 µeV).