Electronic Supplementary Material (ESI) for Soft Matter.
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Supporting Information for: Extending Timescale of Molecular Simulations by Using Time-Temperature Superposition: Rheology of Ionic Liquids

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Table of Contents

Table S1: Simulation run information of the steady shear for viscosity calculation.

Shear rate, $\dot{\gamma}$ (s^{-1})	Simulation run time (ns)
5×10^{6}	40
7×10^{6}	40
1×10^{7}	40
1.5×10^{7}	40
2.5×10^{7}	10
5×10^{7}	10
1×10^{8}	10
2.5×10^{8}	10
1×10^{9}	10
1×10^{10}	10
5×10^{10}	10
1×10^{11}	10

Table S2: Simulation run information of the oscillatory shear for moduli calculation.

Frequency, ω (rad s^{-1})	Number of oscillations	simulation run time (ns)
2×10^{9}	24	72
5×10^{9}	70	84
1×10^{10}	120	72
2×10^{10}	120	36
5×10^{10}	120	14.4
1×10^{11}	120	7.2

Table S3: Zero shear viscosity at different temperatures

Temperature (K)	Zero shear viscosity, η_o (Pa s)
300	0.7729 ± 0.0428
340	0.0720 ± 0.0014
380	0.0171 ± 0.0004
420	0.0070 ± 0.0008
460	0.0038 ± 0.0004

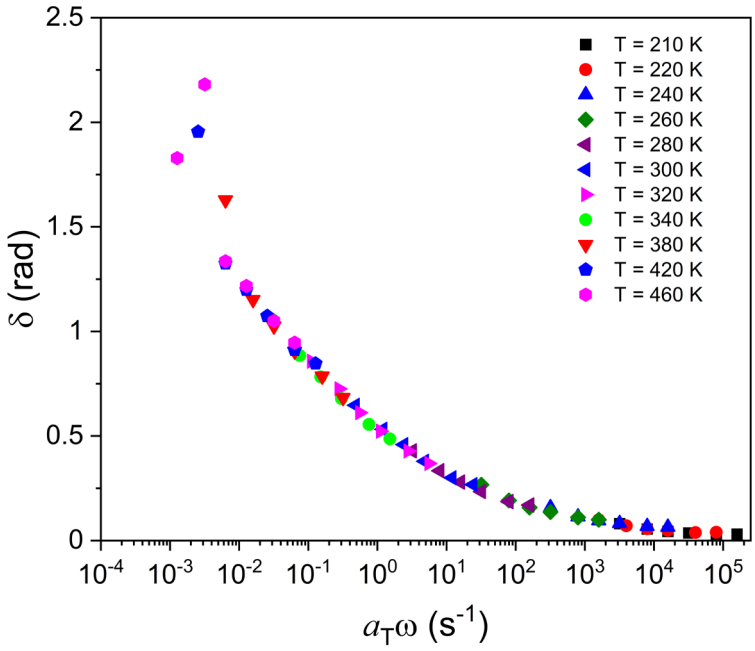

Fig. S1 Master curve of phase angle as a function of the rescaled frequency contsructed at a reference temperature of 300 K.

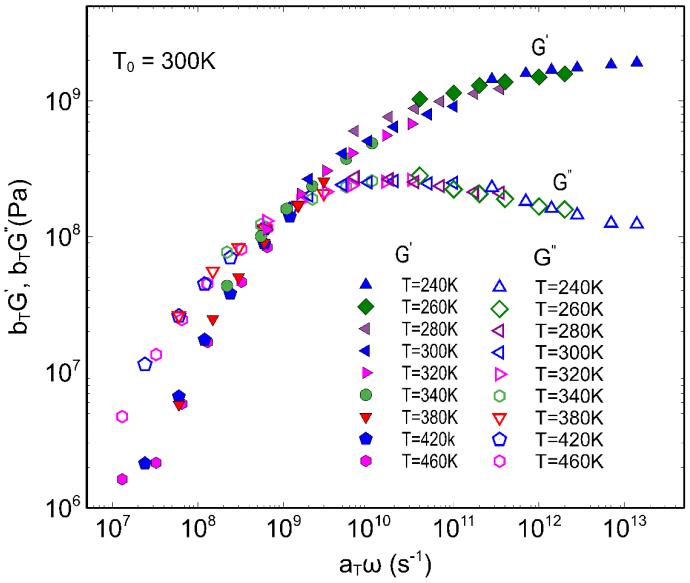

Fig. S2 Master curve of the moduli data using the same shift factors obtained from the MSD master curves at a reference temperature of 300 K.