Electronic Supplementary Material for *Influence of Solvent Structural Variations on the Mechanism of Facilitated Ion Transfer into Room-Temperature Ionic Liquids*. Mark L. Dietz, Julie A. Dzielawa, Ivan Laszak, Blake Young, and Mark P. Jensen

Table S1. Scattering path lengths and energy threshold shifts for the most important scattering paths calculated by fitting FEFF8.00 theoretical phase and amplitude functions to the k^3-weighted Sr K-edge EXAFS. Calculated uncertainties in last digit of the fit parameters are given in parentheses.

		Average Scattering Path Length / Å					
Solvent	Complex Species	Sr-O	Sr-N	Sr-C	Sr-C-O[b]	Sr-O_{distal}[c]	ΔE_0 / eV
1-octanol[a]	$Sr(NO_3)_2(DCH18C6)$	2.67	3.06	3.54	3.86	4.31	
$C_5mim^+Tf_2N^-$ [a]	$Sr(DCH18C6)^{2+}$	2.65		3.55	3.84		
$C_6mim^+Tf_2N^-$	$Sr(DCH18C6)^{2+}$	2.61 (2)		3.55 (2)	3.86 (3)		9.9 (1.1)
$C_8mim^+Tf_2N^-$	$Sr(DCH18C6)^{2+}$	2.62 (2)		3.54 (2)	3.84 (2)		10.3 (9)
$C_{10}mim^+Tf_2N^-$	$Sr(DCH18C6)^{2+}$	2.61 (2)		3.55 (2)	3.83 (2)		9.7 (9)

[a]Reference 23
[b]Multiple scattering path
[c]Includes both single and multiple scattering paths

Table S2. Debye-Waller Factors for the most important scattering paths calculated by fitting FEFF8.00 theoretical phase and amplitude functions to the k^3-weighted Sr K-edge EXAFS. Calculated uncertainties in last digit of the fit parameters are given in parentheses.

		Debye-Waller Factor / $Å^{-2}$				
Solvent	Complex Species	Sr-O	Sr-N	Sr-C	Sr-C-O[b]	Sr-O_{distal}[c]
1-octanol[a]	$Sr(NO_3)_2(DCH18C6)$	0.0136[d]	0.02	0.009	0.002	0.009
$C_5mim^+Tf_2N^-$ [a]	$Sr(DCH18C6)^{2+}$	0.0136[d]		0.010	0.004	
$C_6mim^+Tf_2N^-$	$Sr(DCH18C6)^{2+}$	0.0136[d]		0.011 (2)	0.004 (4)	
$C_8mim^+Tf_2N^-$	$Sr(DCH18C6)^{2+}$	0.0136[d]		0.011 (2)	0.004 (3)	
$C_{10}mim^+Tf_2N^-$	$Sr(DCH18C6)^{2+}$	0.0136[d]		0.011 (2)	0.003 (3)	

[a]Reference 23
[b]Multiple scattering path
[c]Includes both single and multiple scattering paths
[d]Fixed parameter