Supplementary Material

Role of the association of ions in ionic liquid/molecular solvent mixtures onto metal extraction

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1) Table 1-SI: Electrical conductivity, density and viscosity of BA + $[C_1C_4Im][NTf_2]$, $[C_1C_8Im][NTf_2]$, $[C_8Pyr][NTf_2]$ and $[C_1C_8Pyrro][NTf_2]$ at 298.15K as a function of the mole fraction of BA.

2) Figure 1-SI: Infrared spectra BA + $[C_1C_8Im][NTf_2]$ mixture at 298.15K.

3) Figure 2-SI: Infrared spectra BA + $[C_1C_8Pyrro][NTf_2]$ mixture at 298.15K.

Table 1-SI: Electrical conductivity, density and viscosity of BA + $[C_1C_4Im][NTf_2]$, BA + $[C_1C_8Im][NTf_2]$, BA + $[C_8Pyr][NTf_2]$ and BA + $[C_1C_8Pyrro][NTf_2]$ at 298.15K as a function of the mole fraction of BA.

	x_{BA}	Conductivity ($mS.cm^{-1}$)	Density (g/cm^3)	Viscosity (mPa.s)
$[C_1C_8Im][NTf_2]$	0	1.310	1.320355	90.324
	0.2622	1.94	1.274569	44.20
	0.5001	3.07	1.205477	17.10
	0.7054	4.07	1.119730	6.459
	0.7503	4.14	1.094489	4.987
	0.7970	4.06	1.064685	3.474
	0.8503	3.61	1.026588	2.528
	0.8976	2.79	0.984994	1.730
	0.9305	1.9	0.954560	1.308
$[C_1C_4Im][NTf_2]$	0	3.9	1.436527	50.22
	0.2414	5.29	1.367879	26.00
	0.4810	6.7	1.275394	11.88
	0.6824	7.25	1.168238	4.903
	0.7372	7.04	1.128113	3.418
	0.7923	6.54	1.086014	2.648
	0.8427	5.35	1.043935	2.043
	0.8928	3.73	0.996443	1.470
	0.9456	1.63	0.941054	1.092
$[C_1C_8Pyrro][NTf_2]$	0	0.82	1.289012	138.17
	0.2589	1.45	1.253504	51.31
	0.4969	2.56	1.183625	17.37
	0.6954	3.53	1.107485	7.102
	0.7499	3.61	1.082117	5.068
	0.8031	3.55	1.048070	3.420
	0.8484	3.26	1.017616	2.500
	0.9016	2.42	0.975724	1.732
	0.9431	1.31	0.937732	1.202
$[C_8Pyr][NTf_2]$	0	0.97	1.329012	104.14
	0.2556	1.66	1.279420	49.62
	0.5010	2.71	1.208740	18.43
	0.6984	3.71	1.124141	6.824
	0.7522	3.84	1.091885	4.873
	0.7996	3.77	1.061317	3.573
	0.8487	3.33	1.021783	2.465
	0.8996	2.58	0.984050	1.732
	0.9493	1.24	0.934890	1.227

Figure 1-SI: Infrared spectra BA + $[C_1C_8Im][NTf_2]$ mixture at 298.15K. Spectrum of pure IL is in red, pure BA in green and spectra of mixtures are in the black.

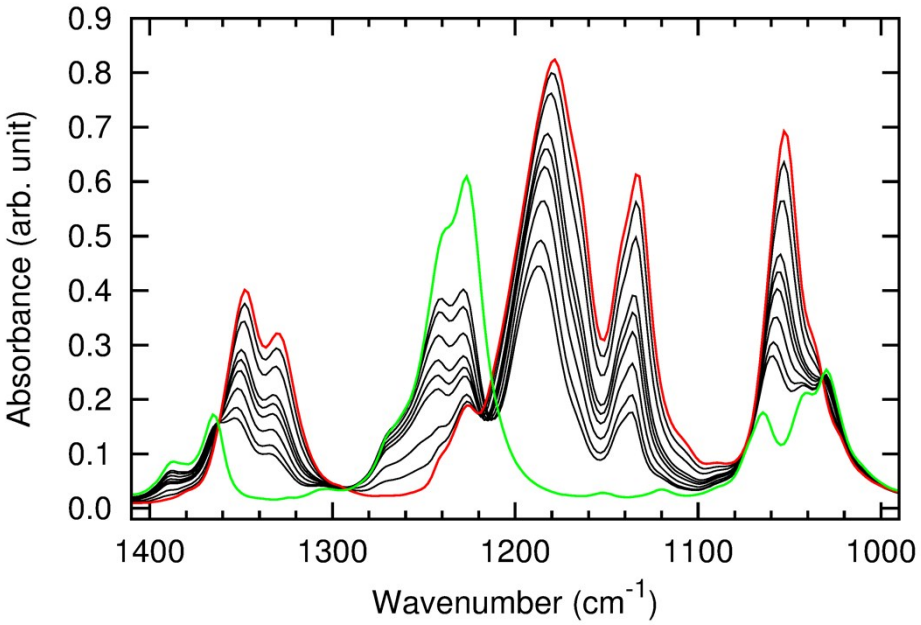

Figure 2-SI: Infrared spectra BA + $[C_1C_8Pyrro][NTf_2]$ mixture at 298.15K. Spectrum of pure IL is in red, pure BA in green and spectra of mixtures are in the black.