Supporting Information

An Experimental and Computational Study on Material Dispersion of 1-Alkyl-3-Methylimidazolium Tetrafluoroborate Ionic Liquids

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Table S1. Experimental densities in g/cm^3 of the selected ILs at 11 different temperatures.

	ρ (g/cm^3)						
T (K)	[C_2Mim][BF_4]	[C_3Mim][BF_4]	[C_4Mim][BF_4]	[C_6Mim][BF_4]	[C_7Mim][BF_4]	[C_8Mim][BF_4]	[C_{10}Mim][BF_4]
293	1.284358	1.238723	1.204041	1.148754	1.126412	1.105994	1.066633
295	1.282830	1.237252	1.202615	1.147344	1.125030	1.104628	1.065257
297	1.281303	1.235780	1.201193	1.145930	1.123640	1.103250	1.063879
299	1.279776	1.234306	1.199769	1.144513	1.122252	1.101871	1.062504
301	1.278257	1.232833	1.198353	1.143160	1.120861	1.100490	1.061129
303	1.276741	1.231365	1.196937	1.141802	1.119475	1.099112	1.059756
305	1.275226	1.229899	1.195519	1.140441	1.118134	1.097730	1.058382
307	1.273712	1.228434	1.194140	1.139080	1.116799	1.096369	1.057007
309	1.272196	1.226969	1.192694	1.137711	1.115456	1.095046	1.055636
311	1.270689	1.225511	1.191276	1.136346	1.114119	1.093716	1.054265
313	1.269186	1.224050	1.189870	1.134985	1.112780	1.092389	1.052892

Table S2. Experimental refractive index at selected wavelengths at T=293 K (the letters correspond to the denomination of the Fraunhofer lines)

	P (336.1 nm)	F (486.1 nm)	D (589.3 nm)	He:Ne (633 nm)	Z (822.7 nm)	(1470 nm)
$[C_2Mim][BF_4]$	1.4398	1.4185	1.4129	1.4114	1.4073	1.4025
$[C_3Mim][BF_4]$	1.4465	1.4247	1.4190	1.4173	1.4130	1.4077
$[C_4Mim][BF_4]$	1.4505	1.4287	1.4229	1.4213	1.4168	1.4114
$[C_6Mim][BF_4]$	1.4571	1.4353	1.4296	1.4280	1.4236	1.4184
$[C_7Mim][BF_4]$	1.4594	1.4377	1.4319	1.4303	1.4261	1.4210
$[C_8Mim][BF_4]$	1.4611	1.4394	1.4337	1.4321	1.4279	1.4235
$[C_{10}Mim][BF_4]$	1.4655	1.4438	1.4380	1.4364	1.4321	1.4274

Table S3. Experimental refractive index at selected wavelengths at T=303 K.

	P (336.1 nm)	F (486.1 nm)	D (589.3 nm)	He:Ne (633 nm)	Z (822.7 nm)	(1470 nm)
$[C_2Mim][BF_4]$	1.4372	1.4159	1.4103	1.4088	1.4047	1.3999
$[C_3Mim][BF_4]$	1.4435	1.4219	1.4162	1.4146	1.4104	1.4052
$[C_4Mim][BF_4]$	1.4477	1.4260	1.4202	1.4186	1.4143	1.4089
$[C_6Mim][BF_4]$	1.4541	1.4324	1.4267	1.4251	1.4209	1.4158
$[C_7Mim][BF_4]$	1.4563	1.4348	1.4291	1.4275	1.4233	1.4185
$[C_8Mim][BF_4]$	1.4581	1.4365	1.4308	1.4292	1.4250	1.4204
$[C_{10}Mim][BF_4]$	1.4623	1.4407	1.4350	1.4334	1.4292	1.4244

Table S4. Experimental refractive index at selected wavelengths at T=313 K.

	P (336.1 nm)	F (486.1 nm)	D (589.3 nm)	He:Ne (633 nm)	Z (822.7 nm)	(1470 nm)
$[C_2Mim][BF_4]$	1.4346	1.4133	1.4078	1.4062	1.4021	1.3972
$[C_3Mim][BF_4]$	1.4405	1.4190	1.4135	1.4119	1.4078	1.4028
$[C_4Mim][BF_4]$	1.4449	1.4233	1.4176	1.4160	1.4117	1.4064
$[C_6Mim][BF_4]$	1.4511	1.4295	1.4239	1.4223	1.4181	1.4132
$[C_7Mim][BF_4]$	1.4533	1.4319	1.4263	1.4247	1.4206	1.4159
$[C_8Mim][BF_4]$	1.4551	1.4335	1.4279	1.4263	1.4221	1.4174
$[C_{10}Mim][BF_4]$	1.4592	1.4377	1.4320	1.4304	1.4262	1.4214