The parameters of the [CMIM]Cl molecules in simulations are listed in **Table I**.

Table I New Atom Types and Parameters for [CMIM]Cl

atom types			
type	mass	element	comment
o2h	15.9994	O	hydroxyl oxygen
o1=	15.9994	O	oxygen in carbonyl
c3'	12.01115	C	carbonyl carbon
c4	12.01115	C	generic sp3 carbon
c4z	12.01115	C	carbon, sp3, bonded to -N_3
c3a	12.01115	C	aromatic carbon
n2=	14.0067	N	nitrogen

Equivalences					
type	nonB	bond	angle	torsion	oop
o2h	o2h	o2h	o2	o2	o2
o1=	o1=	o1=	o1=	o1=	o1=
c3'	c3'	c3'	c3'	c3'	c3'
c4	c4	c4	c4	c4	c4
c4z	c4z	c4	c4	c4	c4
c3a	c3a	c3a	c3a	c3a	c3a
n2=	n2=	n2=	n2=	n2=	n2=

Bond Increments			
c3a	n2=	0.199	0.199
n2=	c4z	0.345	0.345
c3a	c3a	0	0
n2=	c4	0.345	0.345
c4	c4z	0	0
c4	c3'	0	0
c3'	o1=	0.45	-0.45

Bond					
I	*J*	R0	K2	K3	K4
n2=	c3a	1.4	350	0	0
n2=	c4z	1.474	337.06	-147.37	213.633
c3a	c3a	1.417	470.8361	-627.6179	1327.6345
n2=	c4	1.474	337.06	-147.37	213.633
c4	c4z	1.53	299.67	-501.77	679.81
c4	c3'	1.514	312.3719	-465.829	473.83

c3'	o1=	1.216	823.7948	-1878.7939	2303.531

Angle						
I	*J*	*K*	Theta0	K2	K3	K4
c3a	n2=	c3a	120	60	0	0
n2=	c3a	c3a	120	60	0	0
c3a	c3a	n2=	120	60	0	0
n2=	c4z	c4	117.317	55.242	0	0
c4	c3'	o1=	119.3	65.1016	-17.9766	0
c4	c3'	o2h	100.3182	88.8631	-3.8323	-7.9802
o1=	c3'	o2h	118.9855	98.6813	-22.2485	10.3673

Torsion						
I	*J*	*K*	*L*	V1	V2	V3
c3a	n2=	c3a	c3a	0	1	0
c4z	n2=	c3a	c3a	0	1	0
c3a	n2=	c3a	n2=	0	1	0
c4z	n2=	c3a	n2=	0	1	0
c3a	n2=	c4	c4	0	0	-0.02
n2=	c3a	c3a	n2=	0	4.5	0
c3a	c3a	n2=	c3a	0	0	0
n2=	c4z	c4	c3'	0	0	0
c4z	c4	c3'	o1=	0	0.78	0
c4z	c4	c3'	o2h	-2.5594	2.2013	0.0325

Non-bond (LI9-6)		
I	*r*	$\mathcal{E}$
c3'	3.9	0.064
c4	3.854	0.062
c4z	3.65	0.08
c3a	3.915	0.068
o1=	3.43	0.192
o2h	3.58	0.096
n2=	3.83	0.096

The parameters of the [DMIM]PF_6 molecules in simulations are listed in **Table II**.

Table II New Atom Types and Parameters for [DMIM]PF_6

atom types			
type	mass	element	comment
c4	12.01115	C	generic sp3 carbon
c4z	12.01115	C	carbon, sp3,

c3a	12.01115	C	aromatic carbon
n2=	14.0067	N	nitrogen

Equivalences

type	nonB	bond	angle	torsion	oop
c4	c4	c4	c4	c4	c4
c4z	c4z	c4	c4	c4	c4
c3a	c3a	c3a	c3a	c3a	c3a
n2=	n2=	n2=	n2=	n2=	n2=

Bond Increments

c3a	n2=	0.199	0.199
n2=	c4z	0.345	0.345
c3a	c3a	0	0
n2=	c4	0.345	0.345
c4	c4z	0	0

Bond

I	*J*	R0	K2	K3	K4
n2=	c3a	1.4	350	0	0
n2=	c4z	1.474	337.06	-147.37	213.633
c3a	c3a	1.417	470.8361	-627.6179	1327.6345
n2=	c4	1.474	337.06	-147.37	213.633
c4	c4	1.53	299.67	-501.77	679.81

Angle

I	*J*	*K*	Theta0	K2	K3	K4
c3a	n2=	c3a	120	60	0	0
n2=	c3a	c3a	120	60	0	0
c3a	c3a	n2=	120	60	0	0
n2=	c4z	c4	117.317	55.242	0	0
c4z	c4	c4	112.67	39.516	-7.443	-9.5583
c4	c4	c4	112.67	39.516	-7.443	-9.5583

Torsion

I	*J*	*K*	*L*	V1	V2	V3
c3a	n2=	c3a	c3a	0	1	0
c4z	n2=	c3a	c3a	0	1	0
c3a	n2=	c3a	n2=	0	1	0
c4z	n2=	c3a	n2=	0	1	0
c3a	n2=	c4	c4	0	0	-0.02
n2=	c3a	c3a	n2=	0	4.5	0
c3a	c3a	n2=	c3a	0	0	0
c4	c4	c4	c4	0	0.0514	-0.143

Non-bond (LI9-6)		
I	*r*	$\mathcal{E}$
c4	3.854	0.062
c4z	3.65	0.08
c3a	3.915	0.068
n2=	3.83	0.096