List of Tables

Table 1.1  
Shapes of the surfactant self-assembly for different values of the packing parameter.

Table 3.1  
Reorientation times of 9-PA and R110 in [emim$^+$][BF$_4^-$] as a function of temperature along with solvent viscosity.

Table 3.2  
Reorientation times of 9-PA and R110 in [bmim$^+$][BF$_4^-$] as a function of temperature along with solvent viscosity.

Table 3.3  
Reorientation times of 9-PA and R110 in [hmim$^+$][BF$_4^-$] as a function of temperature along with solvent viscosity.

Table 3.4  
Reorientation times of 9-PA and R110 in [moim$^+$][BF$_4^-$] as a function of temperature along with solvent viscosity.

Table 3.5  
Reorientation times of 9-PA and R110 in [emim$^+$][PF$_6^-$] as a function of temperature along with solvent viscosity.

Table 3.6  
Reorientation times of 9-PA and R110 in [bmim$^+$][PF$_6^-$] as a function of temperature along with solvent viscosity.
Table 3.7
Reorientation times of 9-PA and R110 in [hmim$^+$][PF$_6^-$] as a function of temperature along with solvent viscosity.

Table 3.8
Reorientation times of 9-PA and R110 in [moim$^+$][PF$_6^-$] as a function of temperature along with solvent viscosity.

Table 3.9
Solute dimensions and van der Waals volumes together with shape factors and boundary condition parameters calculated using the SED hydrodynamic theory.

Table 3.10
Values of $A$ and $n$ obtained for 9-PA and in [Rmim$^+$][BF$_4^-$] from linear Least-Squares Fits of $\tau_r$ versus $\eta/T$ Plots.

Table 3.11
Values of $A$ and $n$ obtained for 9-PA and R110 in [Rmim$^+$][PF$_6^-$] from linear least-squares fits of $\tau_r$ versus $\eta/T$ plots.

Table 3.12
Values of $A$ and $n$ obtained for R110 in [Rmim$^+$][BF$_4^-$] from linear least-squares fits of $\tau_r$ versus $\eta/T$ plots at low and high values of $\eta/T$.

Table 3.13
Values of $A$ and $n$ obtained for R110 in [Rmim$^+$][PF$_6^-$] from linear least-squares fits of $\tau_r$ versus $\eta/T$ plots at low and high values of $\eta/T$. 
Table 4.1
Reorientation times of 9-PA and R110 in [mmim$^+$][Tf$_2$N$^-$] as a function of temperature along with solvent viscosity.

Table 4.2
Reorientation times of 9-PA and R110 in [emim$^+$][Tf$_2$N$^-$] as a function of temperature along with solvent viscosity.

Table 4.3
Reorientation times of 9-PA and R110 in [mpim$^+$][Tf$_2$N$^-$] as a function of temperature along with solvent viscosity.

Table 4.4
Reorientation times of 9-PA and R110 in [bmim$^+$][Tf$_2$N$^-$] as a function of temperature along with solvent viscosity.

Table 4.5
Reorientation times of 9-PA and R110 in [hmim$^+$][Tf$_2$N$^-$] as a function of temperature along with solvent viscosity.

Table 4.6
Reorientation times of 9-PA and R110 in [moim$^+$][Tf$_2$N$^-$] as a function of temperature along with solvent viscosity.

Table 4.7
Reorientation times of 9-PA and R110 in [dmim$^+$][Tf$_2$N$^-$] as a function of temperature along with solvent viscosity.

Table 4.8
Reorientation times of 9-PA and R110 in [ddmim$^+$][Tf$_2$N$^-$] as a function

xxxii
of temperature along with solvent viscosity.

**Table 4.9**
Reorientation times of 9-PA and R110 in [mtdim⁺][Tf₂N⁻] as a function of temperature along with solvent viscosity.

**Table 4.10**
Reorientation times of 9-PA and R110 in [hdmim⁺][Tf₂N⁻] as a function of temperature along with solvent viscosity.

**Table 4.11**
Reorientation times of 9-PA and R110 in [modim⁺][Tf₂N⁻] as a function of temperature along with solvent viscosity.

**Table 5.1**
Viscosities of 1-alkyl-3-methylimidazolium bis(trifluoromethylsulfonyl)-imides, quantum yields, fluorescence lifetimes, radiative and nonradiative rate constants of DODCI in 1-alkyl-3-methylimidazolium bis(trifluoromethylsulfonyl)imides at 298 K.

**Table 5.2**
Pre-exponential factors and activation energies for the isomerization of DODCI obtained from isoviscosity plots.

**Table 5.3**
Activation energies for the isomerization of DODCI and for viscous flow obtained from Arrhenius plots.

**Table 6.1**
Variation of fluorescence lifetimes and nonradiative rate constants of DODCI and MC 540 in AOT/isoctane/water reverse micelles as a
function of W at 298 K.

**Table 6.2**

Variation of fluorescence lifetimes and nonradiative rate constants of DODCI and MC 540 in AOT/cyclohexane/water reverse micelles as a function of W at 298 K.