

UNDERSTANDING THE BEHAVIOR OF DICATIONIC ROOM-TEMPERATURE IONIC LIQUIDS THROUGH STEADY STATE, TIME-RESOLVED FLUORESCENCE AND NMR STUDIES

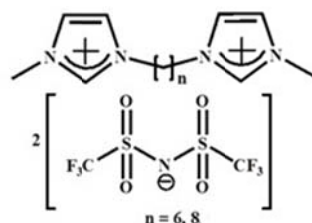
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Abstract:

In recent times, the room temperature ionic liquids (ILs) have attracted considerable attention both from academia and industry due to the fact that these materials possess interesting physico-chemical properties.¹ Interestingly, it has also been observed that the properties of ILs can be tuned by appropriate choice of cations and anions.² Very recently, dicationic ionic liquids having different alkyl spacers have been developed.^{3,4} Recent studies, when compared with their monocationic counterpart, have demonstrated that density, viscosity, surface tension, glass transition temperature, etc. of the dicationic systems are appreciably higher than those of the monocationic analogues.^{3,4} It is important to have comprehensive understanding on the intermolecular interactions, structure and dynamics in these materials so that they can be used in new avenues. Studies on solvation and rotational relaxation dynamics can provide great deal of information on these aspects. Studies on solvent and solute dynamics by employing some well known organic fluoroprobes in dicationic (see Scheme 1) as well as monocationic ILs have been investigated. NMR investigations have also been carried out to throw more light on the mechanism of the photo-processes. The details of the outcomes of these investigations will be presented in this talk.



Scheme 1. Molecular structure of dicationic RTILs

References

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