Linking Ion Structure with Aromatic Solubility in Ionic Liquids

Wesley A. Henderson, Department of Chemical & Biomolecular Engineering,
North Carolina State University Raleigh, NC 27695-7905

NC STATE UNIVERSITY

This work delineates the link between ion structure and aromatic solubility in ionic liquids (ILs) as certain ILs are very effective solvents for both polycyclic aromatic (including heteroaromatic) materials. Four classes of ILs have been examined with the bis(trifluoromethanesulfonyl)imide ($TFSI^-$) anion. Surprisingly, the trialkylimidazolium salts are the best solvents, while the dialkylimidazolium salts are the worst. Longer alkyl chains greatly improve the polyaromatic solubility.