

Some Physico-Chemical Properties of Imidazolium and Pyridinium Based Ionic Liquids

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Syntheses are reported for ionic liquids containing imidazolium or pyridinium cations and various anions such as trifluoromethanesulfonate, dicyanamide, bis(trifluoromethylsulfonyl)imide, nonafluorobutanesulfonate or new borate anions. Densities, melting points, glass-transition temperatures, solubility in water and polarities have been measured. Water-immiscible ionic liquids containing tetrafluoroborate anions or water-immiscible task-specific ionic liquids (TSIL) have been applied to the extraction of metal ions from wastewater. No co-extractant is used in this work. We show that ionic liquids can extract efficiently metal ions such as nickel, zinc, cadmium, mercury, and lead without any ion-exchange process.