Imidazolium-Based Ionic Liquids as Solvents for Analysis of Lipophilic Extractives from Biomass

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Abstract

Ionic liquids are organic salts made of cations and anions of which most of them are liquids at room temperature [1-3]. This is generally a newly emerging class of compounds which so far has been discovered to have numerous applications in chemistry [2] due to their attractive features such as negligible vapour pressure, high thermal stability, biodegradability, ability to solvate compounds of different polarity and miscibility with aqueous and organic solvents [4], [5]. Different classes of ionic liquids have been synthesised so far, such as, imidazolium, ammonium, pyridinium, isoquinolinium, sulfonium, phosphonium, pyrrolidium and others [6]. Since their discovery ionic liquids have raised a considerable excitement among researchers due to their ability to combine with different reagents in number of applications. The other aspect of ionic liquids is their ability to be recycled which minimizes the cost of usage as well as making them environmentally friendly. Ionic liquids so far have been used as solvents in different areas including for catalysis, synthesis and purification [6]. They have high ability of dissolving biopolymers such as cellulose and other biomass due to their ability to interact with biopolymer matrix forming hydrogen bonding [7] (Scheme 1).