

Synthesis and applications of (chiral) ionic liquids

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Ionic liquids have emerged as viable substitutes to standard molecular solvents. Defined as salts being liquids near room temperature, they are made by the association of an organic cation (or anion) with a non-coordinating counter ion. Yet, their preparation and characterization is not as trivial as it appears. Since their structure can be easily designed and tuned for particular applications, they offer numerous prospects. One of the most appealing perspectives for the synthetic chemists relies on their ability to promote chemical reactions, including with potential chirality transfer. The preparation and characterization of various chiral ionic liquids, among which imidazolium and pyridinium cation-based salts and tartrate-anion derived derivatives will be presented and discussed. Applications in the field of Heck-Matsuda arylation and multi-component reactions will also be detailed.