

# SYNTHESIS AND APPLICATIONS OF CHIRAL IONIC LIQUIDS AS ORGANOCATALYSTS

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**C**hiral ionic liquids (CILs) are the compounds which possess chirality either in the cation or anion or in both and exhibit prominent applications in asymmetric synthesis and organocatalysis, polymerization, resolution of racemates etc. In some cases, CILs provide better results in catalysis than enzymes and transition-metal based catalysts. Their most advantageous property is that they can be recovered and reused in the reaction procedures. These can be used as chiral additives and/or chiral stationary phase in advanced analytical methods like liquid/gas chromatography and capillary electrophoresis. These are also important in chiral recognition of numerous compounds using spectroscopic methods. One can aim at the synthesis of chiral ionic liquids either from the chiral pool or by asymmetric synthetic methods. The chiral pool based synthesis is preferable because of the availability of the inexpensive chiral building blocks. In the present talk, the synthesis and characterization of chiral ionic liquids derived from natural chiral building blocks (terpenes, alkaloids, and carbohydrates) shall be described. Further, organocatalytic applications of such chiral ionic liquids in enantio-selective reduction, multi-component enantio-selective organic synthesis, enantio-selective reductive amination etc. shall be highlighted.

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