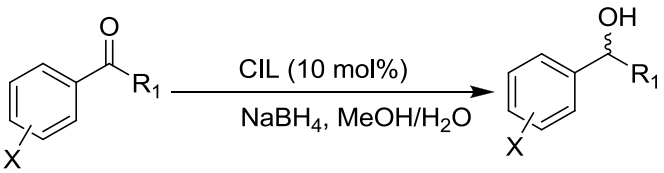


Nicotine based chiral ionic liquids: Useful catalysts for asymmetric hydrogenation reactions

Nirmaljeet Kaur and Harish Kumar Chopra*
*Department of Chemistry,
Sant Longowal Institute of Engineering and Technology, Longowal - 148106, Distt. Sangrur (Pb.), India

Recently, asymmetric synthesis gained much interest of the chemists due to the applications of the enantiopure products in pharmaceutical and other industries. Chiral ionic liquids are well known for their use as reaction media and/or organocatalysts in many reactions. With low vapour pressure, excellent thermal stability and solvent potential these species are considered as the future solvents for organic synthesis [1,2]. These ionic species coordinates with substrates has led to stereoselectivity in many organic reactions, one such reaction is asymmetric hydrogenation. We have developed some new chiral ionic liquids [3,4] based on **nicotine**. These chiral ionic liquids were employed in asymmetric reduction of prochiral ketones using sodium borohydride (illustrated in **Scheme 1**). Using both type of catalysts, moderate to excellent enantiomeric excess was obtained. The chirality transfer is due to the formation of ionic intermediate between the ionic liquid catalysts and ketone substrates, in the solution.



Scheme 1: Asymmetric hydrogenation using chiral ionic liquids

[1] Singh A.; Chopra, H.K. *Curr. Org. Synth.* **2017,** 14(4): 488 – 510.
[2] Bica, K.; Gaertner, P. *Eur. J. Org Chem.* **2008,** 3235-3250.
[3] Singh, A.; Chopra, H.K. *Tetrahedron: Asymmetry* **2016,** *27,* 448-453.
[4] Singh, A.; Chopra, H.K. *Tetrahedron: Asymmetry* **2017,** *28(3),* 414-418.

Biography(100-150 words)

Dr. Harish Kumar Chopra has completed his PhD in Organic Chemistry by Punjabi University, Patiala (INDIA). She has been working as professor of Chemistry at Sant Longowal Institute of Engg. & Technology (SLIET), Longowal, Punjab, INDIA. He has published more than 70 papers in reputed journals and has been serving as Dean (Planning & Development) and Registrar at SLIET), Longowal in addition to being Full time Professor.

Presenting author details
Full name: **Harish Kumar Chopra**
Session name/ number: **Organic Cemistry (Track 2)**
Category: **Oral/Poster** (Oral/ Poster)

Email id: **harishchopra@sliet.ac.in**
Contact number: **Mobile: 9417666437**