Plenary Lecture
57th Annual Convention of Chemists (ACC) - Indian Chemical Society (ICS)
Recent Trends in Chemical Sciences (RTCS 2020)

Making Chiral Heterocycles Using Chiral Heterocycles as Ligands

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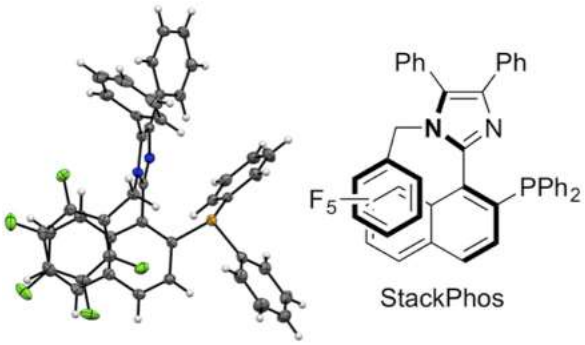
Abstract:

Enantioselective catalysis has been a mainstay of contemporary organic chemistry and, as such, the development of new ligands for transition metal catalysis is an important and active area of research. Finding new ligand archetypes enables the development of new reactions and new synthetic strategies. In this vein, we introduced imidazole-based chiral biaryl *P*,*N*-ligands[1,2] where the axial chirality is enabled by stabilizing pi-pi interactions. These ligands have proven to be excellent promoters for alkyne addition reactions and recent results in this area from our laboratory will be presented.[3,4]

Figure:



References and Notes:

[1] Cardoso, F. S. P.; Abboud, K. A.; Aponick, A. *J. Am. Chem. Soc.* **2013**,*135*, 14548.
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[3] DeRatt L. G.; Pappoppula, M.; Aponick, A. *Angew. Chem., Int. Ed.* **2019,** *58*, 8416.
[4] Mishra, S.; Aponick, A. *Angew. Chem., Int. Ed.* **2019,** *58*, 9485-9490.

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Bio-Sketch of Speaker

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Aaron Aponick was born in Atlantic City, New Jersey and grew up in Harrisburg, Pennsylvania. He became interested in organic chemistry at Lebanon Valley College where he studied the reactions of quinones with organometallics under the guidance of the late Carl Wigal. After obtaining a B.S. in Chemistry in 1998, he moved to the University of Michigan and joined the research group of Will Pearson. At UM, where he was an Eastman Kodak Fellow and an American Chemical Society, Division of Organic Chemistry Fellow (sponsored by the Schering-Plough Research Institute), his interests in the chemistry of imines, the synthesis of alkaloids, and catalytic enantioselective reactions developed. In 2003, he was awarded a Ph.D. and moved to Stanford University where he worked with Barry Trost as a National Institutes of Health Postdoctoral Fellow.

In July 2006, he began his independent career as an Assistant Professor of Chemistry at the University of Florida and was promoted to Associate Professor in 2013 and full Professor in 2020. His work focuses on the development of new reactions, specifically in the area of catalysis, with an emphasis on developing new methods for heterocycle synthesis and using heterocyclic chiral ligands in catalytic enantioselective reactions. To date, eighteen students have been awarded a Ph.D. under his supervision and three more will graduate this year. During his career, he has been heavily involved with graduate education and was recently appointed Director of Graduate Studies. In addition to these duties, he is also the Director of the Florida Center for Heterocyclic Compounds, founded by the late Alan Katritzky, and is the Conference Chair for the Florida Heterocyclic and Synthetic Conferences (FloHet) that are held biennially in Gainesville.