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“Ferrocene Thiazolines: A Versatile Scaffold to Build Bidentate Ligands”

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The ferrocene-based ligands are ubiquitous in catalysis, mainly due to their well-known electron donor properties, rigidity, steric bulkiness and the possibility of accessing to planar chirality in 1,2-disubstituted ferrocene ligands. One of key ligands used in asymmetric catalysis is FcPhox, which includes an oxazoline fragment tether to ferrocene.¹

Recently, our research group have developed an original synthetic method to obtain enantiomerically pure ferrocene thiazolines, using ferrocenyl Fischer carbene complexes as starting material.^{2,3}

In this seminar, I will talk about the use of 2-thiazoline fragment as DMG to build bidentate ligands in a diastereoselective fashion. Moreover, I will show the results obtained in different catalytic applications such as C-C couplings², asymmetric allylic alkylation³, olefin oligomerization⁴, and others.

1) Dai, L.H.; Tu, T.; You, S.L.; Deng, W.P.; and Hou, X.L. **Asymmetric Catalysis with Chiral Ferrocene Ligands**, *Acc. Chem. Res.* 2003, 36, 659-667. b) Gómez-Arrayas, R; Adrio, J.; Carretero, J. C. *Angew. Chem. Int. Ed.* 2006, 7674.

2) Corona-Sánchez, R.; López-Cortés, J. G.; Ortega-Alfaro, M. C.; Sandoval-Chávez, C.; Toscano, R. A. **2-Ferrocenyl-2-thiazoline as a building block of novel phosphine-free ligands**. *Dalton Trans.* 2013, 42, 11992–12004.

3) Sánchez-Rodríguez, E. P.; Hochberger-Roa, F.; Corona-Sánchez, R.; Barquera-Lozada, J. E.; Toscano, R. A.; Urrutigoñy, M.; Gouygou, M.; Ortega-Alfaro, M. C.; López-Cortés, J. G. **Chiral bidentate [N,S]-ferrocene ligands based on a thiazoline framework. Synthesis and use in palladium-catalyzed asymmetric allylic alkylation**. *Dalton Trans.* 2017, 46, 1510–1519.

4) Rodríguez, B.; Cortés-Arriagada, D.; Sánchez-Rodríguez, E. P.; Alfredo Toscano, R.; Ortega-Alfaro, M. C.; Lopez-Cortés, J. G.; Toro-Labbé, A.; Rojas, R. S. **B(C6F5)₃ Promotes the catalytic activation of [N,S]-ferrocenyl nickel complexes in ethylene oligomerization**. *Appl. Catal. A.* 2018, 550, 228–235.