



ACS Local Section

New York

Long Island Subsection

Long Island ACS November Seminar

Date: Thursday, November 5, 2020

Time: 6 PM

Place: Remote.

For Zoom link contact: JSleckman@qcc.cuny.edu

Synthesis and Applications of N-Heterocyclic Carbene Containing Macrocycles

Anibal R. Davalos and Steven T. Diver.
University at Buffalo, Buffalo, NY, 14226

The synthesis and applications of N-heterocyclic carbene (NHC)-containing macrocycles are presented. NHCs are versatile ligands and they have been exploited significantly in metal catalyzed reactions such as olefin metathesis and cross couplings. We envision that a macrocyclic ligand will both protect the metal center and impart improved selectivity. Our synthetic approach has shown to be a suitable route to obtain macrocycles with different dimensions and functionalities from very similar starting materials. These newly synthesized macrocyclic NHCs have shown to promote intramolecular Michael-Stetter reactions after deprotonation. In addition, the corresponding ruthenium and palladium macrocyclic NHC complexes have been synthesized, providing an active set of metathesis and cross coupling catalysts. Herein, we report a reactivity profile and structural data of the synthesized catalysts as well as offer inside into their relative reactivity. Ultimately, based on these findings we will suggest future directions in macrocyclic design.