

Focused Lecture

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Room 014 – Johannisallee 29 – 04103 Leipzig

Organometallic chemistry using macrocyclic pincer ligands

Conferring thermal stability whilst permitting a broad range of metal-based reactivity, the application of *mer*-tridentate “pincer” ligands in organometallic chemistry and homogeneous catalysis has had a profound impact. The predictable and modular composition of pincer ligands enables the steric and electronic properties of metal derivatives to be tuned through changes to the constituent donor groups, their substituents or the backbone configuration itself, and these adaptations have been extensively explored. Motivated by the potential to exploit additional reaction control through their unique steric profile and construct interlocked molecular

assemblies, our group has become interested in developing the organometallic chemistry of macrocyclic pincer ligands. In this seminar, the ability of these macrocyclic ligands to promote reactivity that is either orthogonal to or not possible with acyclic analogues will be highlighted. Discussion will focus on recent work on C(sp)–C(sp²) bond forming reactions involved in the homocoupling of terminal alkynes, the cleavage of the formidably robust C(sp)–C(sp) bond, and electric field effects induced by the conformation of the pincer ligand.