

Expanding the Chemical Space of Gold by Ligand Design

The research activities in my group are focused on the design of bifunctional ligands for applications in organic and organometallic chemistry. We are particularly interested in new highly reactive species and new chemical transformations. Very fundamental in nature with thorough structural/bonding analyses and mechanistic investigations, our studies aim at developing (catalytic) reactions complementary to those currently known.

In this seminar, I will focus on gold chemistry, where ligand design proved to be extremely powerful and to open completely new chemical space. Special interest will be given to ligands triggering challenging transformations, Au(I)/Au(III) cycling in particular. The stabilization and applications of « activated » gold complexes such as π -allyl will also be presented. Finally, the possibility to access new redox states will be discussed and first results on « fake » Au(IV) complexes will be reported.

