



Designing new Ligands: Catalytic Applications of Pyridine-Containing Macrocyclic Complexes

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The introduction of a pyridine moiety into the skeleton of a polyazamacrocyclic ligand affects both the thermodynamic properties and the coordination kinetics of the resulting metal complexes. These features have engendered a great interest in the scientific community and the applications of pyridine-containing macrocyclic ligands range from biology to supramolecular chemistry, encompassing MRI, molecular recognitions, materials and catalysis. In this lecture, I will provide a perspective on the catalytic applications of metal complexes of pyridine-containing macrocyclic ligands (Pc-L's) which have been studied in our group (Figure 1), with a focus interest on the structural features relevant to catalysis.¹ The increased conformational rigidity imposed by the pyridine ring allowed for the isolation and characterization of metal complexes which show a rich coordination chemistry.² The very different conformations accessible upon coordination and the easy tuneable synthesis of the macrocyclic ligands have been exploited in stereoselective syntheses.³

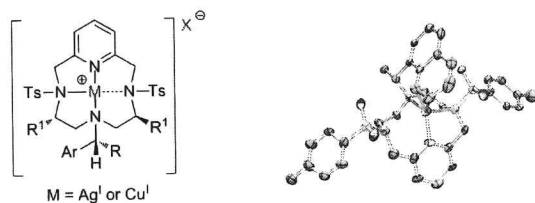


Fig. Metal complexes of Pc-L's and X-ray structure of a Cu(I) complex with a rare h^2 -naphthyl moiety coordinated to the metal center.

Key words: macrocyclic ligands, homogeneous catalysis, copper, silver, C-C bond forming reactions.

References

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