Seminarios itinerantes

Karl KIRCHNER
Vienna University of Technology, Austria

19 a 28 de Mayo 2015

Chemistry based on non-precious metal PNP and PCP pincer complexes

Martes, 19 de Mayo, **Universitat Jaume I**, Castellón
11:30 h, Seminario Edificio de Investigación-I (eperis@uji.es)

Jueves, 21 de Mayo, **CINQUIMA, Universidad de Valladolid**
(espinet@qi.uva.es)

Lunes, 25 de Mayo, **Universidad de Castilla la Mancha,** Ciudad Real
(Blanca.Manzano@uclm.es)

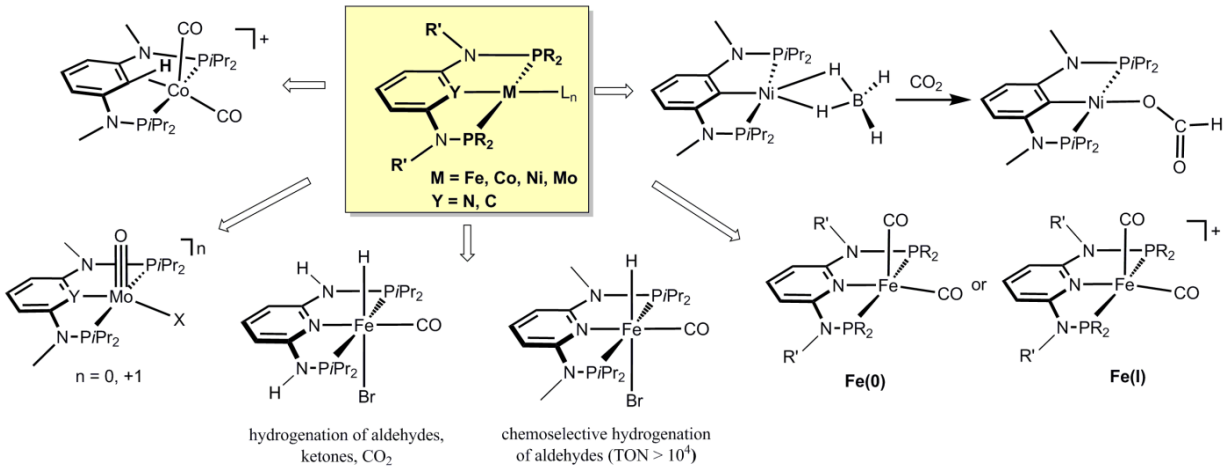
Martes, 26 de Mayo, **Instituto de Investigaciones Químicas**, Sevilla
12:30 h, Salón de actos del IIQ (campora@iiq.csic.es)

Jueves, 28 de Mayo, **Universidad de Zaragoza**
12 h, Sala de Grados de la Facultad de Ciencias (sola@unizar.es)

GEQO Grupo Especializado de Química Organometálica de la Real Sociedad Española de Química

RSEQ Real Sociedad Española de Química
El Sitio de la Química en España

One of the ways of modifying and controlling the properties of transition metal complexes is the use of so-called “pincer” ligands. This class of tridentate ligands has found numerous applications in various areas of chemistry, including catalysis, due to their combination of stability, activity and variability. We are currently focusing on the synthesis and reactivity of non-precious metal complexes containing PNP and PCP pincer ligands based on the 2,6-diaminopyridine and 1,3-diaminobenzene scaffolds where the aromatic ring and the phosphine moieties are connected via NH, N-alkyl, or N-aryl linkers. The advantage of these ligands is that both substituents of the phosphine and amine sites can be systematically varied in a modular fashion which has a decisive effect on the outcome of reactions.



This has resulted in the preparation of a range of new pincer complexes which exhibit unusual properties [1-5]. The use of such complexes as catalysts in different reactions has also been investigated. This lecture presents an overview of recent research in the field of aminophosphine-based pincer complexes with emphasis on the non-precious metals iron, molybdenum, cobalt, and nickel.

References:

[1] Benito-Garagorri, D. Kirchner, K. *Acc. Chem. Res.* **2008**, *41*, 201.

[2] Murugesan, S.; Stöger, B.; Carvalho, M. D.; Ferreira, L. P.; Pittenauer, E.; Allmaier, G.; Veiros, L. F.; Kirchner, K. *Organometallics.* **2014**, *33*, 6132.

[3] Gorgas, N.; Stöger, B.; Pittenauer, E.; Allmaier, G.; Veiros, L. F.; Kirchner, K. *Organometallics* **2014**, *33*, 6905.

[4] de Aguiar, S. R. M. M.; Öztopcu, Ö.; Stöger, B.; Mereiter, K.; Veiros, L. F.; Pittenauer, E.; Allmaier, G.; Kirchner, K. *Dalton Trans.* **2014**, *43*, **14669**.

[5] Bichler, B.; Glatz, M.; Stöger, B.; Mereiter, K.; Veiros, L. F.; Kirchner, K. *Dalton Tran.* **2014**, ***43*, 14517.**

Karl KIRCHNER was born in Wiener Neustadt, Austria, in 1960. He attended the Vienna University of Technology from 1979 until 1987, where he received his Diploma and Ph.D. under the supervision of Prof. Roland Schmid. After a two-year postdoctoral stay at Washington State University with Prof. John P. Hunt and an additional postdoctoral year with Nobel laureate Prof. Henry Taube at Stanford University he returned to Austria and joined the research group of Prof. Roland Schmid. He became associate Professor in 1994 at the Vienna University of Technology. He is, or has been, a member of the Editorial Advisory Board of Organometallics and the European Journal of Inorganic Chemistry. He is author of over 190 research publications in refereed journals in the field of inorganic and organometallic chemistry and presented over 80 invited lectures at universities and conferences worldwide. He has mentored in his laboratory 42 graduate students. He received a Japan Society for the Promotion of Science Fellowship in October of 1995, has been appointed as a visiting Professor at Kyushu University, Japan, in 2000, and at the National Institute of Technology, Tiruchirappalli, India, in 2008. In 1999 he was awarded with the Novartis Prize in Chemistry. His research interests are in the fields of coordination chemistry, organometallic chemistry, and homogeneous catalysis. He is a member of the Austrian Chemical Society and the American Chemical Society.

Institute of Applied Synthetic Chemistry, Vienna University of Technology,
Getreidemarkt 9, 1060 Vienna, AUSTRIA

kkirch@mail.tuwien.ac.at
http://www.ias.tuwien.ac.at/research-divisions/