Bis(Silylene) Pincer Type Ligands: A Silicon System to Explore in the Universe of Catalysis

Daniel Gallego*

*Group of Metalorganics and Inorganic Materials, Chemistry Department, Technische Universität Berlin, Cluster of Excellence "Unifying Concepts in Catalysis", Straße des 17. Juni 135, D-10623 Berlin, Germany. Email: dgallego@mailbox.tu-berlin.de

Known σ-donor systems in pincer ligands

Hydrogenation of alkenes
Hartwig, JACS Catalysis 2012

Activation of NH,
Hartwig, Science 2005

Activation of CO,
Milstein, ACIE 2011

Activation of CO2,

Isolation of reaction intermediate!
[Ph-O-Cu]

Parahydrogen Induced polarization

Hydrosilylation of ketones

Sonogashira Cross Coupling

σ-donor strength. Si > Ge > P

Unifying Concepts of Catalysis “UniCat” Cluster of Excellence & BIG NSE Graduated School

Personal motivations:
- Learn every day
- Curiosity
- Contribute to society
- Chemistry

Different chemistry backgrounds: Multicultural group

Support:
- Economical
- Human (students and relatives)
- Networking

Prof. Dr. M. Driess
Divalent Si compounds as σ-donors for catalysis

Prof. Dr. B. Kersting

Prof. Dr. D. Gallego Mahecha

ASC Erasmus Mundus Master

Multicultural transition states:
- Uni. Lille 1, France & Uni. Leipzig, Germany
- Learning from the roots of chemistry:
  - Ostwald (Uni. Leipzig): Nobel Prize in Chemistry 1909
- German Beer as rate determining step

Chemistry ASC Erasmus Mundus Master

Different chemistry backgrounds: Multicultural group

German Beer as energy sink

Work with and for the Colombian society
 Favor the low social class
 Do science to solve national problems
 Keep attracting new students for the chemistry world

“The beauty of a living thing is not the atoms that go into it, but the way those atoms are put together.” Carl Sagan, Cosmos

“Almost started by simply curiosity... don’t let your curiosity... don’t let your scientific soul!”

“...in our DNA, the calcium in our teeth, the iron in our blood, the carbon in our apple pies were made in the interiors of collapsing stars. We are made of stardust.”

Carl Sagan, Cosmos

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