

MS13-2-9 Germylene- β -sulfoxide hemilabile ligand in coordination chemistry

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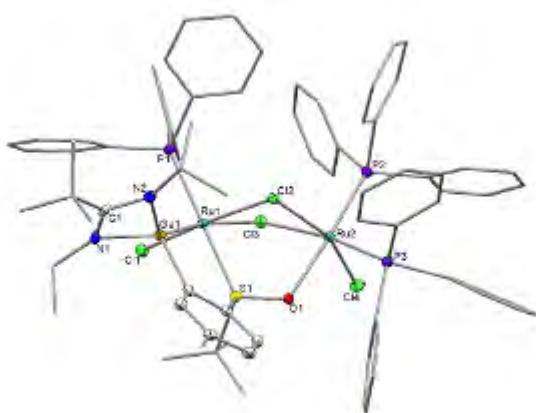
S. Mallet-Ladeira ¹, D. Madec ²¹ICT- CNRS - Toulouse (France), ²LHFA- UPS/CNRS - Toulouse (France)**Abstract**

The use of transition-metal germylenes complexes in catalysis remains sporadic, with only a few recent reports¹. In this context, we described the synthesis of a germylene- β -sulfoxide ligand and its abilities in coordination chemistry². We characterized transition metal complexes by X-ray diffraction and an unprecedented bridged bis-ruthenium complex.

References

1. (a) Brück, A.; Gallego, D.; Wang, W.; Irran, E.; Driess, M.; Harwig, J. F. Pushing the σ - Donor Strength in Iridium Pincer Complexes: Bis(silylene) and Bis(germylene) Ligands Are Stronger Donors than Bis(phosphorus(III)) Ligands. *Angew. Chem. Int. Ed.* 2012, 51, 11478-11482. (b) Wang, W.; Inoue, S.; Enthaler, S.; Driess, M. Bis(silylenyl)- and Bis(germelynyl)- Substituted Ferrocenes: Synthesis, Structure, and Catalytic Applications of Bidentate Silicon(II)Cobalt Complexes. *Angew. Chem. Int. Ed.* 2012, 51, 6167-6171. (c) Gallego, D.; Brück, A.; Irran, E.; Meier, F.; Kaupp, M.; Driess, M.; Harwig, J. F. From Bis(silylene) and Bis(germylene) Pincer-Type Nickel(II) Complexes to Isolable Intermediates of the NickelCatalyzed Sonogashira Cross-Coupling Reaction. *J. Am. Chem. Soc.* 2013, 135, 15617-15626. (d) Gallego, D.; Inoue, S.; Blom, B.; Driess, M. Highly Electron-Rich Pincer-Type Iron Complexes Bearing Innocent Bis(metallylene)pyridine Ligands: Syntheses, Structures, and Catalytic Activity. *Organometallics* 2014, 33, 6885-6897. (e) Alvarez-Rodríguez, L.; Cabeza, J. A.; Fernández-Colinas, J. M.; García-Álvarez, P.; Polo, D. Amidinatogermylene Metal Complexes as Homogeneous Catalysts in Alcoholic Media. *Organometallics* 2016, 35, 2516-2523. (f) Sharma, M. K.; Singh, D.; Mahawar, P.; Yadav, R.; Nagendran, S. Catalytic Cyanosilylation Using Germylene Stabilized Platinum(II) Dicyanide. *Dalton Trans.* 2018, 47, 5943- 5947.
2. Lenz, N.; Mallet-Ladeira, S.; Baceiredo, A.; Kato, T.; Madec, D. Germylene-Sulfoxide as a Potential Hemilabile Ligand: Application in Coordination Chemistry. *Dalton Trans.*, 2018, 47, 15751-15756.

An unprecedented bridged bis-ruthenium complex



Ni(0)- complex

