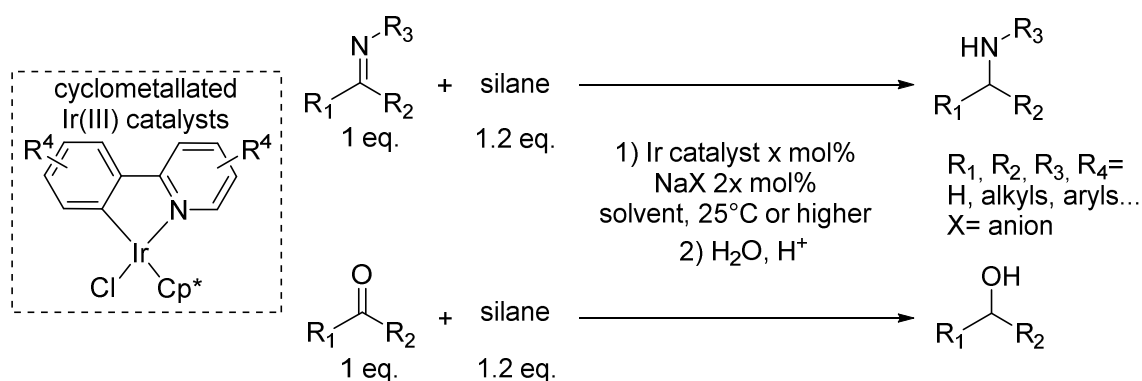


MASTER ERASMUS TRAINING PERIOD AT ENSCL	
SPECIALITY	ORGANIC CHEMISTRY
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### Iridium(III) catalysed hydrosilylation of C-C and C-Heteroatom insaturations

The catalytic reduction of C-C and C-heteroatom insaturations is one of the most used chemical reactions in synthetic organic chemistry. On one hand, hydrogen is a widely used reducing agent provided one of the numerous metal catalysts available is used.[1a] On the other hand, hydrosilanes are also efficient reducing agents when combined with a catalyst. The hydrosilylation reaction which can be operated in mild conditions, without any high pressure equipment, is an interesting alternative to hydrogenation provided inexpensive and abundant hydrosilanes are used. As compared to hydrogen, silanes have a modular reactivity depending the substituents at the silicium atom and the silylated residues can have further applications.[1b]

Recently, we have shown Iridium(III) cyclometallated complexes could be active catalysts for various organic reactions including the hydrosilylation of imines.[2] These reactions could be performed rapidly, with low catalyst loadings, in mild conditions. Now, our focus is on the hydrosilylation of other reagents with C-C and C-heteroatoms insaturations. Compounds like alkynes, alkenes, aldehydes, ketones, esters and amides will afford after hydrosilylation and hydrolysis the related alkenes, alkanes, alcohols and amines.



To summarize, a Master training period is proposed in the field of organic chemistry, homogeneous catalysis and organometallic chemistry. In a stimulating environment, the applicant will be fully trained to research using various experimental techniques (organic synthesis, catalysis, Schlenk and glovebox) and analytical methods (GC, HPLC, NMR...).

References: [1] (a) P. A. Dub, T. Ikariya, *ACS Catal.* **2012**, 2, 1718; (b) D. Addis, S. Das, K. Junge, M. Beller, *Angew. Chem. Int. Ed.* **2011**, 50, 6004.

[2] (a) Y. Corre, W. Iali, M. Hamdaoui, J.-P. Djukic, F. Agbossou-Niedercorn, C. Michon, *Catal. Sci. Tech.* **2015**, 5, 1452-1458; (b) C. Michon, K. MacIntyre, Y. Corre, F. Agbossou-Niedercorn, *ChemCatChem* **2016**, DOI: 10.1002/cctc.201600238R1.