

Institut de Chimie Moléculaire  
de l'Université de Bourgogne  
ICMUB (CNRS UMR 6302)

Société Chimique de France  
Section Bourgogne Franche-Comté  
École doctorale Carnot-Pasteur

# CONFÉRENCE DE CHIMIE MOLÉCULAIRE

**Vendredi 15 décembre 2017 à 10h30**

Salle "Jean Tirouflet" du bâtiment IRCAMAT

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## **Synthesis and Properties of Porphyrins Fused to *N*-Heterocyclic Carbene Gold(I) Complexes**

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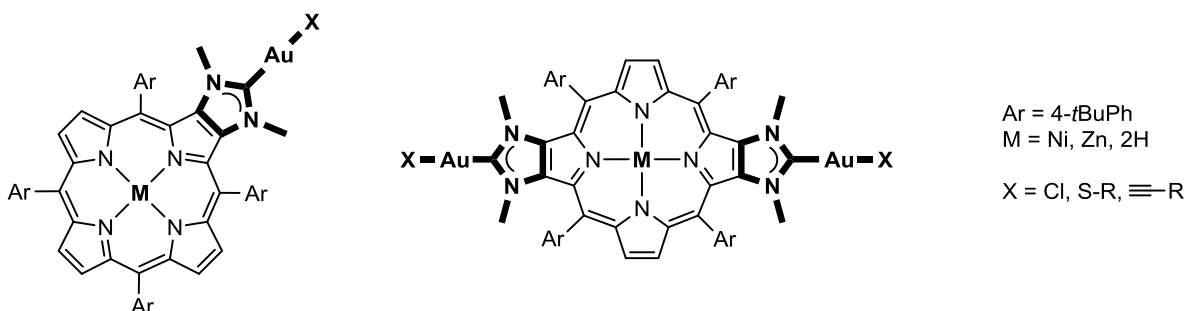
# Synthesis and Properties of Porphyrins Fused to N-Heterocyclic Carbene Gold(I) Complexes

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Metalloporphyrins functionalized at their periphery with ligands allow the anchoring of metal complexes, which can play different roles such as : (i) assembling units when synthesizing multiporphyrinic systems, (ii) catalytic sites whose catalytic properties can be finely tuned according to the nature of the metal in the porphyrin, or (iii) metallodrugs for dual therapy when they are combined with the photodynamic properties of porphyrins. In the field of organometallic chemistry, N-heterocyclic carbenes (NHCs) represent a unique class of ligands that can strongly bind metal ions in low and high oxidation states. Surprisingly, NHCs have been scarcely used as peripheral ligands of porphyrins. In the course of this presentation, we will show some examples of porphyrins fused to NHC-metal complexes,<sup>[1]</sup> with a special focus on our recent advances with Au(I) complexes in view of photodynamic therapy applications.<sup>[2]</sup> Porphyrins fused to two NHC-Au(I) complexes and their use as building-blocks for the synthesis of organometallic polymers will also be presented.



## REFERENCES

- [1] a) J.-F. Lefebvre, M. Lo, D. Leclercq, S. Richeter, *Chem. Commun.* **2011**, 47, 2976-2978; b) J.-F. Lefebvre, M. Lo, J.-P. Gisselbrecht, O. Coulembier, S. Clément, S. Richeter, *Chem. Eur. J.* **2013**, 19, 15652-15660.
- [2] a) J.-F. Longevial, A. Langlois, A. Buisson, C. H. Devillers, S. Clément, A. van der Lee, P. D. Harvey, S. Richeter, *Organometallics* **2016**, 35, 663-672 ; b) J.-F. Longevial, K. El Cheick, D. Aggad, A. Lebrun, A. van der Lee, F. Tielens, S. Clément, A. Morère, M. Garcia, M. Gary-Bobo, S. Richeter, *Chem. Eur. J.* **2017**, 23, 14017-14026.