



## CYCLE DE CONFÉRENCES DE CHIMIE

Avec le concours de : Université Clermont Auvergne  
INP Clermont Auvergne

**Jeudi 12 mai à 16 h**

Amphi 9111, Pôle Physique

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### **C-C or C-Heteroatome bond Formation From Academic Discovery to Mechanisms and Industrial Applications**

The formation of C-C, C=C or C-heteroatom bonds (C-N, -O, -P, -S) through arylation from aromatic halides/diazoniums or through alcohol activation, occurs with high yields using transition metal free, Cu, Mn or Fe based catalytic systems. Low cost and simplicity are features of our methods, which make them particularly well suited for industrial scale syntheses where financial and environmental issues are of greater concern. A lot of companies adopted our technology, especially using copper catalysts, which will assert its position in the industry over the next decades. An example will be presented and investigations concerning the mechanisms will be also detailed.<sup>[1]</sup>

The Cu- or the visible-light decatungstate/disulfide catalyzed hydrofunctionalisation of allenes, or of double and triple bonds, will be also presented.<sup>[2]</sup>

<sup>[1]</sup> a) Taillefer M., Cellier P.P., Cristau H.-J., Spindler J.-F., **2001 Fr 16547, 2002 US 10/159,506**. b) Xia N., Taillefer M. *Angewandte Chemie* **2009**, 48, 337. c) Pichette Drapeau M.; Fabres I., Ciofini I., Grimaud L., Ollevier T., Taillefer M. *Angewandte Chemie* **2015**, 54, 10587. d) Hyde S., Veliks J., Liegault B., Grassi D., Tomlin P., Taillefer M., Le Gouverneur V. *Angewandte Chemie* **2016**, 55, 3785. e) Perego L.A., Blicek R., Groué A., Monnier F., Taillefer M., Ciofini I., Grimaud L. *ACS Catal.* **2017**, 7 (7), 4253. f) Abdine R., Kurpik G., Walczak A., Aeash S.A., Stefankiewicz A.R., Monnier F., Taillefer M., *Journal of Catalysis*, **2019**, 76, 119. g) Zaid Y., Mboyi C.D., Pichette Drapeau M., Radal L., Ouazzani F., Rodi Y.K., Ollevier T., Taillefer M. *Organic Letters* **2019**, 21, 1564. h) Liu Y., Bergès J., Zaïd Y., Ouazzani F., Van Der Lee A., Harakat D., Clot E., Jaroschik F., Taillefer M. *Journal of Organic Chemistry* **2019**, 84, 4413. i) Liu X., Sotiropoulos J.M., Taillefer M., *Organic Chemistry Frontiers*, **2021**, 8, 5112.

<sup>[2]</sup> a) Pages L., Lemouzy S., Taillefer M., Monnier F., *Journal of Organic Chemistry*, **2021**, 86, 21, 15695. b) Blicek R., Lemouzy S., van der Lee A., Taillefer M., Monnier F., *Organic Letters*, **2021**, 23 (23), 9199. c) Prieto A., Taillefer M., *Organic Letters*, **2021**, 23 (4), 1484.