



Funded Experimental PostDoc. position (2 years) Grenoble, France

Title: High-Valent Copper-Oxygen Species for the Activation of inert C-H bond

Institution: Univ. Grenoble Alpes/Department of Molecular Chemistry ([DCM](#))

The project aims to develop innovative catalysts within two groups (CIRe and Sith) in DCM possessing complementary recognized expertise in chemical design and synthesis, characterization techniques such as advanced ultrafast spectroscopies, molecular electrochemistry and in theoretical calculations.

Context: The direct oxidation of aliphatic C–H bond is faced by several drawbacks such as the use of stoichiometric amounts of toxic or rare-metal-based oxidant. Recently, from our group, new bio-inspired high-valent copper $\text{Cu}^{\text{II}}\text{Cu}^{\text{III}}$ species demonstrated their capability to perform strong C–H bonds activation.¹ Clearly, these high-valent species which use a cheap and abundant metal ion are highly promising for the conversion of alkanes displaying strong C-H bonds such as methane into valuable chemicals.

Job description: Capitalizing on our experience with dicopper complexes based on heterocyclic ligand and corresponding copper complexes^{1,2,3}, this Post-doc position will be focused 1) on the preparation of new ligands and corresponding copper complexes 2) characterisation and electrochemical investigation of the targeted high-valent species 3) reactivity studies on various substrates.

Thus, the candidate should have a PhD in chemistry with a good experience in organic/inorganic chemistry, with interest in electrochemistry willing to work in a multidisciplinary cooperative environment.

Additional knowledge in catalysis will be appreciated (although it is not required).

Location: Surrounded by mountains, the campus benefits from a natural environment and a high quality of life and work environment.

Application: Candidates should send a CV, a cover letter, recommendation letters and grade transcripts by email to Catherine Belle (catherine.belle@univ-grenoble-alpes.fr) and Aurore Thibon-Pourret (aurore.thibon@univ-grenoble-alpes.fr). Deadline: November 30th 2022, starting is expected beginning 2023.

¹ Isaac, J. A.; Thibon-Pourret, A.; Durand, A.; Philouze, C.; Le Poul, N.; Belle, C., *Chem. Comm.* **2019**, *55*, 12711

² S. Gentil, J. K. Molloy, M. Carrière, A. Hobballah, A. Dutta, S. Cosnier, W. J. Shaw, G. Gellon, C. Belle, V. Artero, F. Thomas and A. Le Goff, *Joule*, **2019**, *3*, 2020.

³ F. Bacher, J. A. Isaac, C. Philouze, D. Flot, A. Thibon-Pourret, C. Belle, *New J. Chem.* **2020**, *44*, 16713.