Open Ph.D. and post-doctoral positions for *'Reversible Creation of Non-Inherent Reactivity Patterns in Catalytic Organic Synthesis'* Reverse&Cat ERC StG 2018

European Research Council

Dydio Lab/ Complex Systems in Synthesis & Catalysis
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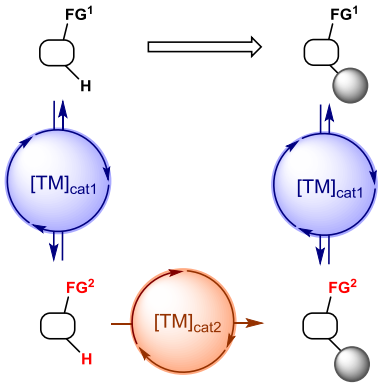
Objective: We seek to hire outstanding researchers at the Ph.D. and post-doctoral level to join our Laboratory at the Institute of Science and Supramolecular, University of Strasbourg. The successful candidates will be involved in the realization of the research program founded by the European Research Council ERC StG 2018 'Reverse&Cat'.

Abstract: Current methods in organic synthesis enable reactions at the most reactive bonds or at bonds predisposed by specific directing groups. Consequently, many less reactive bonds, including numerous C-H and C-C bonds, cannot be functionalized, enormously limiting the scope of possible transformations. To overcome these limitations, we pursue an innovative *Reverse&Cat* strategy, which merges a reversible activation reaction by one catalyst with a functionalization reaction by another catalyst, together enabling functionalization of substrates at their inherently unreactive sites. The unique potential of the approach stems from exploiting three simultaneous processes: (i) the dynamic exchange of one functional group (FG) for another FG that modulates the reactivity of the substrate; (ii) the functionalization of the temporarily activated bond; and (iii) the restoration of the initial FG. In essence, the processes (i) and (iii) – the components of the dynamic equilibrium – realize the novel concept of the temporary creation of non-inherent reactivity of a substrate. Overall, the strategy creates a new dimension of reactivity for otherwise unreactive substrates.



Background: For our seminal work for the proposed approach: Lichosyt, D.; Zhang, Y.; Hurej, K.; Dydio, P. *Nature Catalysis* **2019** (AOP): *Dual-Catalytic Transition Metal Systems for Functionalization of Unreactive Sites of Molecules.* See at: https://doi.org/10.1038/s41929-018-0207-1 (subscription needed), or see preprint at ChemRxiv (open-access): https://doi.org/10.26434/chemrxiv.7235438.v1

We offer:
- The possibility to be involved in cutting-edge projects, using state-of-the-art equipment in a highly motivated research team
- A stimulating, diverse and international research environment & advanced training opportunities
- A competitive salary (1700-3000 EUR/month, depending on the experience)

We require:
- M.Sc. (or equivalent)/ Ph.D. in chemistry for a Ph.D. student/ postdoctoral candidate, respectively
- strong background in organic and inorganic chemistry and homogenous catalysis
- experience of interdisciplinary research, engineering and molecular modeling skills will be considered as an advantage
- commitment and capacity for team work and critical thinking
- fluent written and verbal communication skills in English (French is not required)

Starting date: any time, available from now
Duration of contract: 3 years for a Ph.D. candidate and 1-2 years for a post-doc, with the possibility of extension

Applications written in English should be sent to Dr. Dydio (dydio@unistra.fr), and should include (combined as one pdf file):
(1) cover letter
(2) CV (including your scientific skills, your research experience and publications)
(3) a 2-page summary of your Master thesis/ a 3-page summary of your PhD Thesis
(4) for a prospective Ph.D. candidate a transcript of results from the university-level courses taken
(5) contact information for at least 2 referees (Recommendation letters should be sent directly to dydio@unistra.fr)