

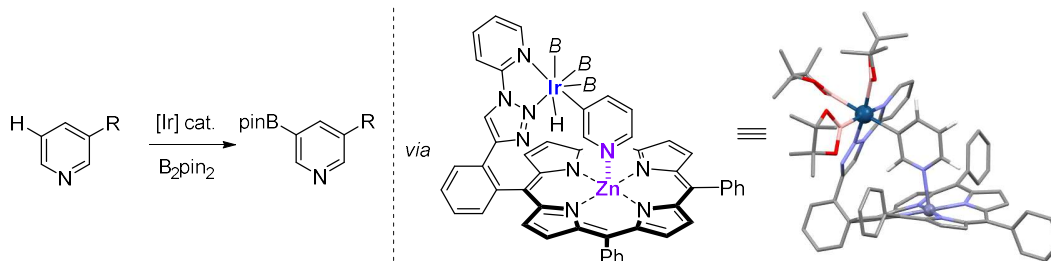


## PhD position Supramolecular and Bio-inspired Catalysis

**Keywords:** Supramolecular Chemistry; Coordination Chemistry; Organic Synthesis; Homogeneous Catalysis

We are offering a challenging PhD position with an excellent international environment at the ISCR. The ISCR provides state-of-the-art facilities and equipment to provide a rewarding career. The Institut des Sciences Chimiques de Rennes (ISCR), belonging to the CNRS and the University of Rennes 1, is one of the leading European Research Centres that combines fundamental and applied research in different areas relevant to the Chemical Sciences. This PhD position will be considered for those students from China (CSC), Mexico (CONACYT), Chile (CONICYT) and Pakistan (Higher Education Commission).

**PhD project:** The project will focus at the interface of ligand design, supramolecular chemistry and transition metal catalysis. The ultimate goal of the project is to implement nature-inspired weak interactions in transition metal catalysis to tackle important issues that traditional approaches have difficulties to address; for example, substrate/product inhibition, substrate selectivity, regio- and site-selectivity, etc. We are looking for a highly motivated candidate with a Master in supramolecular (organic) chemistry, coordination chemistry and/or homogeneous catalysis. The prospective PhD student will acquire experience in metalloporphyrin chemistry (X-ray diffraction studies, multinuclei NMR, UV-vis binding studies, molecular modelling) and Schlenk techniques together with advanced analytical techniques (GC, GC-MS, HRMS, IR). A good level of written and spoken English is requisite (French is not required). Since the ISCR is an equal opportunity employer, women are particularly encouraged to apply.



Complete applications in a single pdf file (CV, cover letter, university marks, and contact information from previous supervisors) can be sent to: [rafael.gramage-doria@univ-rennes1.fr](mailto:rafael.gramage-doria@univ-rennes1.fr).

You can obtain further information about:

- the research group at <https://gramagedoria-lab.com>
- the ISCR at <https://iscr.univ-rennes1.fr/>

**Selected, recent contributions from the hosting laboratory:**

- [1] "Enzyme-Like Supramolecular Iridium Catalysis Enabling C-H Bond Borylation of Pyridines with meta-Selectivity" J. Trouvé, P. Zardi, S. Al-Shehimi, T. Roisnel, R. Gramage-Doria\* *Angew. Chem. Int. Ed.* **2021**, doi: [10.1002/anie.202101997](https://doi.org/10.1002/anie.202101997).
- [2] "Beyond hydrogen bonding: recent trends of outer sphere interactions in transition metal catalysis" J. Trouvé, R. Gramage-Doria\* *Chem. Soc. Rev.* **2021**, *50*, 3565-3584.
- [3] "Remote Ion-Pair Interactions in Fe-Porphyrin-based Molecular Catalysts for the Hydrogen Evolution Reaction" S. Kasemthaveechok, B. Fabre, G. Loget,\* R. Gramage-Doria\* *Catal. Sci. Technol.* **2019**, *9*, 1301-1308.
- [4] "A Supramolecular Palladium Catalyst Displaying Substrate Selectivity by Remote Control" P. Zardi, T. Roisnel, R. Gramage-Doria\* *Chem. Eur. J.* **2019**, *25*, 627-634.
- [5] "Palladium-Catalysed Cross-Coupling Reactions Controlled by Noncovalent Zn<sup>II</sup>-N Interactions" M. Kadri, J. Hou, V. Dorcet, T. Roisnel, L. Bechki, A. Miloudi, C. Bruneau, R. Gramage-Doria\* *Chem. Eur. J.* **2017**, *23*, 5033-5043.