Postdoctoral Position in CO2 Reduction Using Molecular Catalysts

Employer: Institut de Chimie Moléculaire et des Matériaux d'Orsay (ICMMO)
Contract type: Temporary 12 months
Workplace: Orsay/Saclay - Ile-de-France - FRANCE
Skill area: Chemistry
Salary range: 33 000 – 34 600 € annual gross
Stat date: October 2017
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Institut de Chimie Moléculaire et des Matériaux d'Orsay (ICMMO) is one of the most important French structures for academic research in chemistry. The Institute is also closely linked to the CNRS as a Unité Mixte de Recherche CNRS-Université Paris-Saclay. The postdoc position is affiliated to the group of Inorganic Chemistry in a joint project between the team of Artificial Photosynthesis and the group of Dr. Benedikt Lassalle at the SOLEIL synchrotron (Saclay).

Preventing the continuous accumulation of CO_2 in our atmosphere remains one of the major challenges modern science has to face. In a search for a way to recycle the large amount of CO_2 produced by human activity as an alternative fuel or as a C1 source for synthesizing fine chemicals, several metal complexes based molecular catalysts were developed for electro- or photocatalytic reduction of CO_2. In this perspective, our research group develops new bimetallic complexes inspired by metalloenzymes active sites for the electrocatalytic reduction of CO_2. In collaboration with the research group of Dr. Benedikt Lassalle at the SOLEIL synchrotron, our goal for this project is to study the mechanism and the intermediates involved in the catalytic reduction of CO_2 by our catalysts using X-ray absorption spectroscopy.

The candidate is expected to work on the synthesis and the characterization of porphyrin type molecular catalysts and participate in the development of a new analytical method combining electrocatalysis and X-ray absorption spectroscopy.

Candidate's profile:

- PhD in chemistry
- Solid background in synthetic chemistry (inorganic and organic for coordination chemistry),
- First experience in molecular electrocatalysis,
- Some experience in synchrotron-based techniques (XAFS or XANES), or willingness to learn,
- Ability to work with limited supervision as well as ability to work and communicate within an interdisciplinary team,
- Proficiency in scientific English, both written and spoken, is essential.