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Université de Bretagne Occidentale



POSTDOCTORAL POSITION

Development of hybrid materials for CO₂ Electrocatalytic reduction

Tremendous efforts are currently devoted to convert intermittent renewable energy sources into storable chemical forms, for instance by catalyzing CO₂ electroreduction (CO₂RR) into valuable fuels and chemicals (CO, HCOO⁻, or CH₃OH). For this purpose, efficient molecular catalysts based on earth-abundant metal such as Co, Mn and Cu have been developed. Heterogeneous immobilization of such catalysts onto substrate is emerging as an important area for CO₂ utilization. With the aim of designing innovative materials for CO₂RR, the post-doctoral fellow will develop new methodologies for immobilizing molecular catalysts onto carbon based electrode materials.

The post-doctoral fellow will join under the supervision of Dr. Noémie Lalaoui the Biomimetic Activation research group at the CEMCA laboratory in Brest (<http://www.umr6521.cnrs.fr/en/team-ciel/>). The CEMCA laboratory of Brest is a research unit affiliated to both the CNRS and the University of Bretagne Occidentale. The group has all knowledge and technical facilities necessary to develop organometallic chemistry and reactivity studies.

Tasks

- Synthesis and characterization of graftable complexes
- Immobilization of ligands and complexes on electrode surfaces
- Electrocatalytic studies toward CO₂RR
- Dissemination of results at conferences and through scientific articles

Eligibility criteria

- ❖ Applicants must hold a PhD in chemistry and proven research skills evidenced by a least one publication.
- ❖ **The candidate should have spent at least 18 months outside of France from May 2017.**
- ❖ Candidates must have relevant experiences in organometallic chemistry and knowledge for spectroscopic characterization (IR, NMR ...). Additional knowledge in electrochemistry and/or surface modification would be appreciated. Finally, fluency in spoken and written English is a requirement along with an ability to work in a team.

Additional comments

Post-doc duration: 18 months

Gross salary: 2700- 3084 € (before tax)

Starting date: the earliest from the September 1st 2021

How to apply ?

All applications should be sent to Dr Noémie Lalaoui (noemie.lalaoui@univ-brest.fr) and must include:

- a curriculum vitae and contact information of three referees
- a one-page "expression of interest", stating the applicant's interest in working on that particular project.

All incomplete applications will not be considered.