Postdoc Position (24 months)

"Artificial MetalloEnzyme for CO_2 reduction"

Position Description: The Bio-inspired Materials BIM group of the IPREM Institute (UMR 5254 CNRS and University of Pau & Adour), is looking for a very good, highly motivated candidate for a postdoc position opening in July 2024. The BIM group has recently worked on the conjugation between molecular organo-metallic catalysts and synthetic functional macromolecules to develop Artificial MetalloEnzymes AMEs for H_2 evolution.[1] This concept will be now extended to organo-metallic catalyst for CO2 reduction.[2]
Herein the project, both molecular catalyst and functional macromolecules will be conjugated to design and develop efficient and stable AMEs for CO_2 reduction.

Location: IPREM (Pau in South-Western of France).

Missions: The candidate will take a leading role in the synthesis of new/benchmarked molecular catalyst and functional macromolecules. The final AMEs will be used in electrocatalytic conditions for homogeneous/heterogeneous CO_2 electrochemical reduction.

Main responsibilities:

- Synthesis of molecular organo-metallic catalysts for CO2 electrochemical reduction
- Synthesis and design of functional macromolecules by controlled radical polymerization
- Conjugation between catalyst and macromolecules
- General physico-chemical characterization of the catalyst-conjugated macromolecules
- Homogeneous/heterogeneous electrochemical CO2 activity
- C1/C2 products detection by *in situ* GC/MS

Qualifications: Prospective candidates should have a

- Strong background in molecular organo-metallic catalysts and their electrocatalytic activities for CO2 reduction (PhD),
- Preliminary experiences in polymer science, specifically in macromolecular designs and the physical chemistry properties of their homologues will be a plus.
- Proficient in spoken and written English. Strong written and verbal communication skills are required for this position, especially in the context of a highly multidisciplinary topic within the collaborative ENSUITE project.

Risks : Contact with halogenated solvents for NMR analysis

[1] A. Zamader *et al.*, ***Chem. Eur. J***. 2022, , e202202260;. ***ACS Catalysis***, 2023, 13, 1246–1256 ; ***Sustainable Energy & Fuels***, 2023, 7, 4967-4976.
[2] D. Grammatico *et al*., ***ChemSusChem***, 2020, 13, 6418-6425; ***Angewandte Chemie***, 2022, 61, e2022063; ***ChemComm***, 2023, 59, 2279-2282.

Pr. Laurent BILLON
Bio-inspired Materials Group: Functionality & self-assembly
Hélioparc, 2 avenue Angot
64053 Pau Cedex 09
Email : laurent.billon@univ-pau.fr
Tél : 00 33 5 59 40 76 09

Public information : For information on the project and position, interested candidates are encouraged to contact Pr. Laurent BILLON, leader of the Bio-inspired Materials group BIMG: Functionality & Self-assembly, by email at laurent.billon@univ-pau.fr.
(https://iprem.univ-pau.fr/fr/_plugins/mypage/mypage/content/billon.html)
Please include a CV, brief description of research interests, and contact information for at least one professional reference.

The postdoc position is available for a twenty-four months postdoctoral fellowship (24 months) with a gross salary of ca. 3 100€/month, with a starting date on July 2024.