



Postdoctoral fellowship in Oxidative Flow Electrosynthesis

Financial Support : Agence Nationale de la Recherche (ANR - France)

Working contract: 12 months (eventually extendable)

Beginning: From November 2021

Location: Laboratory of Molecular Electrochemistry (<http://www.lemP7.cnrs.fr/>), Université de Paris - UMR CNRS 7591 (Paris) and INNOVERDA (Villejuif)

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Domains: Molecular electrochemistry, Redox reactions, Organic synthesis, Flow chemistry

Project description:

The goal of this joint project - between an academic research laboratory (LEM, University of Paris) and a start-up company (INNOVERDA) - is to develop a novel and sustainable synthetic access to bioactive compounds via oxidative flow electrosynthesis. Conventional synthetic methods often suffer from low yields and toxic or explosive reagents. The goal of this project is to increase synthesis yields and develop new pathway while using environmentally friendly methods, thus following the current trend towards Green Chemistry. Electrolysis will help to avoid currently employed dangerous reagents. The new procedure will be designed as a flow electrosynthesis with the possibility of upscaling up to kg conversion, preparing a novel industrial process.

Our approach aims to combine low-cost, low-waste and eco-responsible synthesis processes with a strong economic potential related to public health.

Skills:

- PhD-thesis in electrochemistry, physico-chemistry, organic or bioorganic chemistry
- Practical experience with modern synthetic methods in preparative organic chemistry, such as electrosynthesis, flow chemistry, microwaves etc. and typical treatments (extraction, separation and purification via column chromatography, crystallization, lyophilisation)
- Experience in using HPLC, UV, IR, NMR, MS/LC-LS and Cyclovoltamograms for structural characterization
- Autonomy in setting up research plans, literature search/survey and continuous follow-up of key research topics
- Mechanistic understanding

Soft skills:

- Fluent in French and/or English
- Comfortable with interdisciplinary and inter-team settings
- flexibility in working at two locations (University research lab and start-up company)
- good organisation and communication skills
- conscious of confidentiality rules
- clear reporting ability

We are looking for a candidate with a solid experience in organic synthesis with knowledge in molecular electrochemistry. Additional skills in bioorganic chemistry would be appreciated.

All applications should include a cover letter and a CV.