

3-year research position available for a young scientist

Electrobiocatalysis for bioremediation of (halogenated) organic pollutants

The laboratory of Bioengineering at the Earth & Life Institute (University of Louvain, Louvain-la-Neuve, Belgium, <https://uclouvain.be/en/research-institutes/eli/elim>) and the laboratory of Ecology of Aquatic Systems (Ecole des Bioingénieurs, Université Libre de Bruxelles, Belgium, <http://esa.ulb.ac.be/>) are seeking a highly motivated young scientist to take in charge an experimental research dedicated to the depollution of contaminated waste by an electrobiocatalytic approach.

The project aims at developing an electrobiocatalytic reactor for simultaneous microbial reductive dechlorination of PCBs (at the cathode) and oxidation of aliphatic and aromatic hydrocarbons (at the anode). The reactor will be carefully designed to ensure optimal redox conditions for the targeted reactions. The evolution of the system will be monitored by multiple in situ measurements, including potential-current relationship, pH, pollutant concentration, gas production, total organic matter content, and microbial community composition and activity. The specific influence of the source inoculum, and the addition of (an) easily degradable carbon source(s), biosurfactants, laccase enzymes and/or redox mediators will be analysed. Finally, the bioreactor will be operated with real fine-grained contaminated sediments from street surfaces and canal dredging. This research is part of a collaborative INNOVIRIS project with other laboratories from the Université Libre de Bruxelles.

Candidate profile:

- Young bioengineer or chemical engineer (university master level) with good academic qualifications.
- Solid background in electrochemistry, analytical chemistry (i.e. chromatography) and microbiology; experience in molecular microbiology (next-generation sequencing, qPCR) is a plus.
- Research-minded, able to adapt quickly to different scientific environments.
- Good practical, experimental and scientific communication skills.
- Rigorous, responsible, self-motivated, autonomous, with a good team spirit.
- Fluent in French and English (written, spoken).

Location:

Louvain-la-Neuve (75% of duration of the project) and Brussels (Campus de la Plaine, Ixelles) (25% of duration of the project, mostly at the end of the project).

Duration: 01/03/2019 - 28/02/2022

Deadline for submission of an application: 20/02/2019

Please send your application (CV + motivation letter + contact details of 2 reference persons) simultaneously to

Prof. Patrick Gerin, Bioengineering laboratory at UCL, patrick.gerin@uclouvain.be

Prof Isabelle George, Laboratory of Ecology of Aquatic Systems at ULB, igeorge@ulb.ac.be

For any additional information, you can contact: Prof. Patrick Gerin, phone +32 (0)10 47 36 46, patrick.gerin@uclouvain.be or Prof Isabelle George, phone +32 (0)2 650 5924, igeorge@ulb.ac.be