

Postdoctoral Researcher – Environmental electrochemistry

SoWa (Soil and Water) National Infrastructure is seeking applicants for post-doc and researcher positions in the field of environmental electrochemistry.

The research topics of the group include environmental factors affecting cycles of important elements in water, sediments, and soils concerning eutrophication of water bodies, heavy metal contamination or greenhouse gas production. These efforts include studies in the hydrodynamics of freshwater bodies, geochemical analyses of inorganic as well as organic components of particles in water, sediments, and soils, seasonal monitoring of environmental conditions and changes, analyses of microbial community structure and manipulative experiments to study particular processes.

The topic of the Postdoc position is the identification of thermodynamic and microbial constraints of redox reactions using electrochemical approaches. Redox properties of minerals and their association with various types of organic substances present naturally in water, sediment, or soil environments should be studied with these techniques. The results should contribute to revealing the patterns in carbon sequestration and redox metals stabilization with organic matter in sediments. These factors lead to unavailability of these compounds to serve as potential terminal electron acceptors (TEA) for microbial metabolism and affect transformation of associated elements as phosphorus or heavy metals. Special focus will be given to sediment/water interface and the redox cycle of iron. Discoveries and results will be very useful in many fields of basic and applied research and management strategies.

We seek a highly motivated scientist with skills in electrochemical techniques, including non-mediated and mediated amperometric and potentiometric measurements, to collect important thermodynamic and kinetic data from environmental samples. Due to multidisciplinary nature of the topic, the applicant should be motivated to introduce and adapt new electrochemical techniques quickly and collaborate with the microbiologists and environmental chemists in the team.

The successful candidates will possess familiarity with electrochemistry, thermodynamics, and redox processes. Background in freshwater ecosystems, sediment, and/or soil science is preferred. The successful candidate must work effectively in multi-disciplinary teams in the preparation of client work products and is expected to be proficient in the analysis and dissemination of information, and work cooperatively as well as independently. Some travel and field work (sampling of environmental media) will be required.

About the employer

SoWa is a newly established part of the Biology Centre of the Czech Academy of Sciences, whose research predominantly addresses ecological topics. The research involves collaboration across disciplines, the use of diverse methodological approaches (molecular biology, genetics, taxonomy, field ecology, chemistry, mathematical modelling, etc.), and a combination of analytical and holistic approaches to problem solving. Core facilities with shared equipment support all of the Centre's scientific institutes. SoWa will primarily support research aimed at understanding the key physico-chemical and biological processes responsible for providing ecosystem services, water runoff, water

purification and nutrient cycling (particularly nitrogen and phosphorus) with emphasis on organic matter decomposition and nutrient release. The main focus will be on ecosystems under heavy anthropogenic pressure.

Further particulars

The position is available from October 1, 2018 onwards. The position is initially offered for 12 months, with a possible extension, based on initial performance. Applicants wishing to further extend their contract beyond this period will be expected to secure at least part of their research through extramural funding.

Information

For additional information, please contact:

Dr. Jakub Borovec

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Application

Applicants should submit a complete resume, list of publications, a statement of research interest and motivation for the application, and the names and contact information of two professional references, by email with subject: Sediment position to: Ms. Simona Zemanova: simona.zemanova@bc.cas.cz