FULLY FUNDED POST-DOCTORAL RESEARCH FELLOWSHIP

Determining the presence of radioactivity in projects involving natural resources *via* the development of new radioanalytical tools. (*Reference number: 2023-04*)

Natural resources directly and indirectly accounted for a significant portion of Canada's gross domestic product and accounted for millions of jobs in Canada. Yet, the sustainable growth of this economic sector is conditional to social acceptability. Been ubiquitous to our world, natural radioactivity is amongst the parameters that create apprehension of the population even if the radioactive emitters are already present in the environment before any anthropogenic activities occur. To tend towards the sustainable development of our natural resources for all three pillars (economic, environmental, and social), accurate, publicly available, and reliable data on the presence and behavior of radioactivity are therefore necessary. As environmental and health effects of an exposure to radioactivity are of concerns for the public, monitoring of the presence radioactivity prior, during and after the exploitation of natural resources is amongst the strongest argument to demonstrate the limited impacts to surrounding communities. Sadly, due to radioanalytical limitations, a monitoring of this parameter is not systematically performed. This is caused by the limited number of laboratories performing such analyses due to cost and trained qualified personnel issues which need to be overcome. The partnership between the academia and the governmental organizations aims towards addressing these issues.

The postdoctoral fellow will be responsible for the development of new tools to accelerate and improve the quantification of Ra and Po at environmental levels by adapting analytical methodologies (resin separation and cloud point extraction) recently developed in our laboratory. In this context, the candidate will have the opportunity to use a wide range of equipment for sample preparation and radiochemical characterization (ICP-MS/MS, alpha spectrometry). In addition, the postdoc will also have the possibility to interact with our partner's organization (Centre d'Expertise en Analyse Environnementale du Québec) for the preparation of reference materials, and the design and validation of new separation resins.

Your profile:

• Your background includes relevant experience in inorganic mass spectrometry and/or radioanalytical chemistry.

• You hold a Ph.D. in either chemistry, environmental sciences, separation sciences, or a closely related field. The PhD should have been obtained after January 2021.

• You possess exceptional theoretical and practical expertise in one or more of the following areas: radiochemistry, separation science, and inorganic mass spectrometry.

• Your impressive scientific portfolio demonstrates a history of well-organized research design and execution.

• Your communication skills in both spoken and written English are strong, and you exhibit the ability to work independently and collaboratively within a team. Your CV and cover letter should emphasize your leadership capabilities, and how this project will contribute to your professional growth.

• You are highly motivated to engage in collaborative efforts with researchers and industry professionals, and you have a keen interest in participating in technology transfer activities.

The selected candidate will have the role of overseeing graduate students, as well as presenting and deliberating over research findings with our provincial collaborators. This position will be based at Laval University, a French-speaking institution (Quebec City, Canada).

Laboratoire de Radioécologie

Admission Department
Chemistry department

Research Supervisor
Dominic Larivière, Université Laval, Québec

Expected profile of the candidate
PhD in analytical or environmental chemistry, separation science, chemistry, or equivalent.

Requirements

- Experience with ICP-MS or radioanalytical techniques
- Autonomy in research
- Excellent writing skills
- Supervision of research staff

Start date
Fall 2023 / Winter 2024

Additional information
35h/week, holidays: 20 days/year
1-year contract, possibility to renew for a second year

Salary
Between 22$/h and 26.30$/h depending on the experience

To apply
Send your cover letter (please provide the reference number) describing research interests and goals, your motivation (max. 2 pages), list of publications highlighting your most relevant peer reviewed works, CV, and academic transcript to: dominic.lariviere@chm.ulaval.ca

For this project, we will encourage applications of members of equity seeking groups.