



Postdoctoral Fellow at McGill University for Ba-tagging with nEXO

The experimental particle physics group at McGill University is looking for a postdoctoral fellow, ideally with a background in ion transport and manipulation, to join the local nEXO team and develop ion-extraction techniques from xenon gas for our Ba-tagging efforts. nEXO is a next generation neutrinoless double beta decay experiment searching for this beyond the Standard Model weak process in the isotope Xe-136.

The goal of the research project is to extract and to identify the double-beta-decay daughter Ba-136 from a gas of the mother isotope, Xe-136, using a radiofrequency funnel and a series of ion traps such as a linear Paul trap for laser spectroscopy and a multi-reflection time-of-flight mass spectrometer. Presently this system is under development (<http://www.physics.mcgill.ca/neutrino/>). The successful candidate will design and assemble electrostatic ion optics, and commission and optimize the complete system offline. A successful Ba-tagging technique will improve the sensitivity of a future neutrinoless double-beta decay search in Xe-136 and allow the unambiguous verification that an event of interest is in fact a true double-beta decay event.

This project focuses on the development of ion-extraction and ion-transport techniques. Candidates should have a strong background in experimental nuclear or particle physics. Experience in ion manipulation and detection is an asset. Candidates need to have a Ph.D. in physics or a closely related field at the time of appointment. Ph.D. candidates should indicate when they are expecting to fulfill their Ph.D. requirements. The appointment is initially for two years with the possibility of renewal for up to three years. The position is part of the [Arthur B. McDonald Canadian Astroparticle Physics Research Institute](#).

Interested candidates should submit their application online or directly to Dr. Thomas Brunner (thomas.brunner@mcgill.ca). The application should include a cover letter (addressing how you meet the job requirements), a statement of purpose (explaining your scientific goals), and a current C.V. Please arrange for at least two letters of reference supporting your application to be sent to Thomas Brunner. Applications will be accepted until the position is filled. For inquiries about the position please contact Thomas Brunner.

The local EXO group as well as CPARC and McGill University are committed to equity and diversity as essential ingredients for academic excellence. We welcome applications from indigenous persons, visible minorities, ethnic minorities, persons with disabilities, persons of minority sexual orientation and gender identities as well as all qualified candidates to productively engage with the diverse communities at McGill.

All qualified applicants are encouraged to apply; however, in accordance with Canadian immigration requirements, Canadians and permanent residents will be given priority.