UNIVERSITY of GUELPH

DEPARTMENT OF PHYSICS

Postdoctoral Position in Experimental Nuclear Physics

Applications are invited for a postdoctoral research position with the University of Guelph Nuclear Physics Group investigating nuclear structure using rare isotopes at TRIUMF's Isotope Separator and Accelerator (ISAC) radioactive ion-beam facility and at the RIKEN Nishina Center for Accelerator-Based Science (Japan). Our group leads experiments with a number of major facilities at ISAC, including the new GRIFFIN gamma-ray spectrometer, the DESCANT neutron-detector array, a 4π β-counter/fast-tape-transport system, and the highly-segmented TIGRESS gamma-ray spectrometer. We also lead a program at the RIKEN Radioactive Ion Beam Facility (RIBF) to study heavy, neutron-rich nuclei using direct reactions using the SAMURAI superconducting dipole magnet.

Gamma-Ray Infrastructure For Fundamental Investigations of Nuclei (GRIFFIN) is a new high-efficiency gamma-ray spectrometer for decay spectroscopy research with the low-energy radioactive beams from the ISAC-I facility. It is now coupled with the DEuterated Scintillator Array for Neutron Tagging (DESCANT), an array of 70 deuterated liquid scintillator neutron detectors, providing β–γ–n coincidence detection capabilities for nuclear structure studies of exotic neutron-rich nuclei and the measurement of β-delayed neutron emission probabilities for r-process nucleosynthesis.

The TRIUMF-ISAC Gamma-Ray Escape Suppressed Spectrometer (TIGRESS) is a position-sensitive gamma-ray spectrometer comprised of sixteen 32-fold segmented HPGe clover detectors for use in experiments with accelerated radioactive ion beams from ISAC-II. One current focus are TIGRESS experiments using direct and transfer reactions in combination with the ancillary silicon detector array SHARC, but new experimental ideas using the TIGRESS Integrated Plunger (TIP) for lifetime measurements, the SPICE in-beam conversion electron detector and the DESCANT neutron detector array are welcomed.

In view of the upcoming ARIEL facility at TRIUMF, we are investigating a new auxiliary silicon tracker array to enhance experiments with extremely neutron-rich nuclei. The ideal candidate has comprehensive understanding and practical experience with silicon detectors and digital electronics and is expected to drive forward the development of this new instrument within an international collaboration.

The candidate is also expected to participate and enrich our research program at the RIKEN Radioactive Ion Beam Factory within the SAMURAI Collaboration. The current focus are studies of neutron-rich nuclei using the quasifree (p,2p) reaction.

We encourage applications from excellent candidates who hold, or will soon graduate with, a Ph.D. in experimental nuclear physics or a closely related field and who are interested in participating in one or more of the above research programs, as well as leading independent research initiatives. Candidates are invited to submit a curriculum vita, list of publications, a statement of research interests, and the names of three professional references to Prof. Dennis Mücher: dmuecher@uoguelph.ca. Review of applications will begin on ***August 1, 2016*** and will continue until the position is filled.