

PhD position in theoretical chemistry at the University of New Brunswick

The group of Stijn De Baerdemacker in the [Department of Chemistry](#) at the [University of New Brunswick](#), Canada has a position for a PhD student available.

Research in the De Baerdemacker group is situated around the development of electronic structure methods for finite-size and strongly correlated quantum many-body systems. Major research themes consist of geminal theory, beyond-integrability methods, density-matrix approaches, among others. More information on our research projects can be found on the [website](#) of the group.

Solving the quantum many-body problem remains one of the key challenges for the future. Many of the solutions to today's technological, medical and societal problems will be found in tomorrow's smart devices, materials, molecules and compounds. Therefore, it is of utmost importance that we develop those theoretical and computational tools that will allow us to understand and predict the quantum properties driving those devices. The present research project answers directly to that call. In recent years, the De Baerdemacker group has built considerable experience in the development of novel electronic structure methods for strongly correlated quantum systems, which are characterized by a proliferation of single-particle configurations contributing to the quantum ground state.

The PhD student will be directly involved with the development of a new electronic structure method, combining fundamental theoretical work with the implementation into powerful and efficient computational codes. The student will be able to enjoy access to high performance computing facilities and a strong international collaboration in North America and Europe.

Interested applicants should be holder of a degree in chemistry or physics, and be highly motivated to work in an interdisciplinary environment. Strong knowledge of quantum many-body theory and/or quantum chemistry is an asset. Preliminary inquiries should be directed to stijn.debaerdemacker@unb.ca before March 11th and include the following

- a motivated cover letter,
- an extensive CV,
- a short statement of research interests (max 1 page),
- the e-mail address and telephone number of 2 references.

Formal applications must be processed and completed online at <https://apply.unb.ca>. Applications will be reviewed starting April 1st, 2019.

Established in 1785, the University of New Brunswick is one of North America's oldest public universities. UNB's outstanding quality and breadth of teaching, ranked areas of study, relevant research and innovative programs make it a leading national university. UNB has two main campuses, with a total enrollment of 12,000 students from more than 100 countries. Both campuses offer the comfort and security of a small community with the vibrancy of a bigger city. The Fredericton campus, one of the most beautiful in the country with its red brick, ivy-covered Georgian architecture and lush landscape, is located in the capital city, which has been ranked as one of the best places to live in Canada.