

Department of Chemistry
The University of British Columbia
Vancouver, BC



Principal Investigator: Prof. Zachary Hudson

Keywords: Quantum computing, optoelectronics, quantum simulations, density functional theory, organic light-emitting diodes

Job Description: A postdoctoral position is immediately available in the Hudson Lab at the University of British Columbia in Vancouver, BC. The candidate will collaborate with OTI Lumionics Inc. (Toronto, ON) to use quantum simulations to design advanced materials for optoelectronics, applying quantum algorithms to complex electronic structure problems.

The candidate will join a multidisciplinary research group at UBC studying problems spanning the field of optoelectronic materials. Current research areas in the group include i) new materials for organic electronics and solid-state lighting; ii) luminescent nanoprobe for bioanalysis; iii) the synthesis of nanomaterials from semiconducting polymers, and iv) quantum computing for optoelectronic materials discovery. For more information, visit hudsonlab.ca.

The ideal candidate will have a Ph.D. in Theoretical Chemistry, or in Materials Chemistry with a strong theory component. Strong knowledge of density functional theory is essential, and while some knowledge of the principles of quantum computing would be beneficial, this position is suitable for candidates hoping to learn more about the quantum computing field. The candidate will also mentor undergraduate and graduate students, as well as assisting with the day-to-day operation of the laboratory. External funding is not required, though candidates holding external funding are highly encouraged to apply.

Requirements:

- A Ph.D. in theoretical chemistry or materials chemistry with a strong theory component;
- Expertise with density functional theory.

Desirable skills include any of the following:

- Familiarity with the principles of quantum computing.
- Proficiency in the following programming languages: Python, Julia, C, C++, and/or FORTRAN.
- Familiarity with quantum chemistry software packages such as GAMESS, Gaussian, PSI4, and/or Terachem
- Expertise with the properties of optoelectronic materials (e.g. bandgap, excited states, applications);

Candidates must be highly motivated and self-driven, capable of independently designing and performing experiments. Excellent verbal and written communication skills, the ability to work well as part of a team, and a strong track record of publications as lead author are also required.

Salary: \$50,000 CAD/year + benefits.

Start Date: Flexible

Location: This position offers flexibility between Vancouver, BC and/or Toronto, ON.

Interested candidates should e-mail their complete application in PDF format by **May 15, 2022** to zhudson@chem.ubc.ca, including:

- A cover letter describing your background, experience, motivation for seeking the position and contact information for three references;
- A CV including complete publication list;
- ‘PDF in Quantum Simulations’ in the subject line.

The evaluation of candidates will begin immediately and continue until filled. Only candidates selected for further evaluation will be contacted for an interview.

The normal hours of work are 40 hours per week for a full-time postdoctoral fellow, recognizing that the needs of the employee’s research and training may require flexibility in both duties and hours of work.

For more information, please visit:

Hudson Group: hudsonlab.ca

UBC Department of Chemistry: www.chem.ubc.ca

OTI Lumionics: <https://otilumionics.com/>

Equity and diversity are essential to academic excellence. An open and diverse community fosters the inclusion of voices that have been underrepresented or discouraged. We encourage applications from members of groups that have been marginalized on any grounds enumerated under the B.C. Human Rights Code, including sex, sexual orientation, gender identity or expression, racialization, disability, political belief, religion, marital or family status, age, and/or status as a First Nation, Metis, Inuit, or Indigenous person.