

Postdoctoral Fellowship at UBC SBQMI in cryogenic thin film characterization

The [Stewart Blusson Quantum Matter Institute at UBC](#) is seeking a postdoctoral fellow to join its [Disorder and Entropy as Design Principles Grand Challenge](#) team in the search for thin film materials that exhibit exceptionally low mechanical loss. The team includes members with theoretical, numerical, thin film growth, opto-mechanical characterization, and gravitational wave detector expertise. The successful candidate will lead the development of a custom, automated cryogenic mechanical loss characterization system to measure the intrinsic mechanical loss of thin-film optical materials in vacuum, at temperatures ranging from 10-300 K.

This postdoctoral fellow will work closely with collaborators in the [LIGO Scientific Collaboration at UBC](#) to develop thin film materials and associated processing techniques that offer lower low-temperature mechanical and optical loss than currently being used in the mirror coatings for gravitational wave detectors, as well as optomechanical transducers for quantum information processing applications.

The successful candidate must have a PhD degree and demonstrated expertise in i) integrated optical design and characterization, ii) cryogenics, iii) the microscopic origins of optical and mechanical loss, and/or iv) thin film growth technologies. They will work closely with other UBC researchers to develop integrated optical test structures and instrumentation, and associated thin film deposition techniques suited to accurately and rapidly assessing a variety of different candidate thin film materials and processes.

More generally, the successful candidate will contribute to writing and publishing articles in top-tier journals; train and mentor SBQMI students; and collaborate with other national and international academic institutions, and government and industry organizations.

Please submit an application by October 30, 2020 through the 'Postdoctoral Fellowship Opportunity' tab on the QMI employment portal: <https://qmi.ubc.ca/employment>. Note that this postdoctoral fellowship portal is accepting applications for more than one Grand Challenge position - please specify that you intend to apply for the [Disorder and Entropy as Design Principles Grand Challenge](#) postdoctoral fellowship in your cover letter. Please get in touch with Jeff Young (young@phas.ubc.ca) or Jörg Rottler (jrottler@physics.ubc.ca) to learn more about the position. Applications should include:

- Brief cover letter, including the QMI researcher(s) with whom you have discussed projects (and an indication of which Grand Challenge you are applying to);
- Names of those who will provide recommendations;
- Curriculum Vitae, including full publication list;
- 1 - 2 page research proposal;
- 3 letters of recommendation (to be sent directly by your referees);

SBQMI is a world-leading venture into research of systems and phenomena involving quantum materials. We believe in the power of collaboration to fuel the search for creative solutions and, in addition to building a strong interdisciplinary team of experimentalists and theorists from physics, chemistry and engineering, have established strong and active partnerships with

TRIUMF, the Canadian Light Source, the Max Planck Society, and many other world leading institutions.

The SBQMI Postdoctoral Fellowships offer competitive salary support and benefits (including extended health and dental coverage) and the opportunity to work with the world-leading groups at the UBC SBQMI and their international research partners.

For more information about SBQMI: www.qmi.ubc.ca

For more information about Vancouver: <https://www.tourismvancouver.com/vancouver/>

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. All qualified candidates are encouraged to apply; however Canadians and permanent residents of Canada will be given priority.