POSTDOCTORAL POSITION

Nano-optomechanical systems for ultrasensitivity and quantum information

The Nanotechnology Initiative is an exciting new collaborative framework between the Nanotechnology Research Centre (of the National Research Council of Canada) and the University of Alberta that hosts multi-year high-impact collaborative projects. An outstanding postdoctoral researcher is sought for a primary research role in the project nano-optomechanical systems (NOMS) for ultrasensitivity and quantum information.

The appointment will be held within the department of Physics at the University of Alberta and supervised by Wayne Hiebert (primarily at NRC), with co-supervision from Paul Barclay (primarily at University of Calgary). Broad scientific interaction with the groups of Doug Vick, John Davis, and Mark Freeman will be available and encouraged. The target start date is September 2018.

NOMS have extraordinary sensitivity potential for mass sensing ([1], [2]) and torque magnetometry ([3], [4], [5]). A paradigm shift in the world of chemical analysis waits for NOMS to achieve single-Dalton limit-of-detection in air at room temperature, to enable chip mass spectrometry. A primary goal of this project and the incumbent is to design, fabricate, and test NOMS devices that exploit ultralow-mass mechanical modes at full dynamic range in order to achieve this single-Da milestone. A second high-profile scientific goal of the project and incumbent will exploit our unique single crystal diamond nanomachining to combine torque magnetometry with diamond colour centre magnetic field sensing.


Requirements: A Ph.D. in Physics, Electrical Engineering, or another appropriate field. Expertise with at least one, and preferably more, of the following: (1) electron beam lithography, (2) optomechanical and photonic modeling, (3) high-finesse nano-scale optomechanical systems. An excellent track record of high-profile publications.

Position term: Position is approved for 2 ½ years. The initial appointment will run until March 31, 2019, with two year-long reappointments available (to March 31, 2020, and March 31, 2021, respectively).

To Apply:
Send a cover letter, CV, list of three contact references, and one or two relevant sample publications to: Wayne.Hiebert@nrc-cnrc.gc.ca

Closing date: Applications will be accepted from immediately until the position is filled.

We thank all applicants for their interest; however, only those individuals selected for an interview will be contacted.

The University of Alberta is committed to an equitable, diverse, and inclusive workforce. We welcome applications from all qualified persons. We encourage women; First Nations, Métis and Inuit; members of visible minority groups; persons with disabilities; persons of any sexual orientation or gender identity and expression; and all those who may contribute to the further diversification of ideas and the University to apply.