

Post-doctoral Research Associate Position on *Development of Micromachined Gravimeters*

Simon Fraser University, British Columbia, Canada

Introduction: The Intelligent Sensing Laboratory (ISL: <http://sense.fas.sfu.ca/>) at Simon Fraser University, BC, Canada, has an opening for a post-doctoral research associate to join our team. We have a vibrant research team that develops advanced materials, micro- and nano-devices, sensor systems, and signal-processing algorithms for sensors. As a member of the team, the successful applicant will primarily work with team members to develop micromachined devices, particularly highly sensitive gravimeters. ISL houses a wide array of microsystem characterization equipment. The group utilizes two cleanrooms at SFU, with world-class facilities for micro- and nanofabrication and characterization. We are looking for an experienced, proactive researcher to contribute to current lab projects and help lead new initiatives.

Qualifications: Candidates must be motivated, self-starting individuals who will join our team of researchers and engineers to collaborate on various aspects of our projects. The candidate must be a hands-on experimentalist with an in-depth understanding of micromechanical devices and sensors, their interface electronics, and their characterization. The candidate will be involved in projects spanning the design, modelling, fabrication, integration, and testing of devices, as well as the development of characterization protocols, documentation of results, and interactions with industrial partners. While the majority of the experimental work will focus on testing and characterization of the devices, it is expected that the successful candidate will spend a significant portion of their time in the cleanroom fabricating and characterizing devices. Administrative responsibilities include preparing progress reports and coordinating team members' efforts towards project milestones. As a senior member of the group, the candidate is expected to train other team members and make direct contributions to the publication of the research results.

What we offer: The researcher will become part of a dynamic research team and will have the opportunity to engage with multiple projects beyond their own. There will also be opportunities to define, initiate, and conduct new lines of research. Our former team members have advanced to roles at prominent Canadian and international institutions in academia, industry, and government. As an official SFU staff member, we offer a competitive employment package for postdoctoral researchers.

How to apply: The intended start date for the position is Spring 2026. The initial appointment is for one year, inclusive of a three-month probationary period. Employment beyond the first year will be subject to satisfactory performance and availability of funds. Further information, including required documents and contact methods, is published at <https://sense.fas.sfu.ca/opportunities.html>.

Review of applications will begin in January 2026 and continue until the positions are filled. Qualified applicants will be contacted directly to arrange technical interviews. We encourage members of underrepresented groups in science and engineering to apply to these positions.

Priority will be given to candidates who are citizens, permanent residents, or valid study-permit holders of Canada.

Main responsibilities:

- Implementation and characterization of microfabrication steps;
- Development of fabrication process flows and test structures as needed;
- Development of physical and numerical models for the micro- and nano-devices and their experimental verification;
- Assistance in electrical and mechanical characterization of micro-fabricated devices at their limits of performance, including noise, bandwidth, and dynamic range;
- Training other team members on all aspects of the project, as required;
- Assistance in new device designs based on measurements and simulations;
- Complete documentation of microfabrication, modelling, and experimental processes to ensure reproducibility of methods and results;
- Coordination of fabrication runs within the team and with external partners;
- Interface with industry partners and preparation of regular project reports.

Other responsibilities:

- Preparation of professional presentations, reports, and publications;
- Contribution to project administration;
- Preparation of regular technical reports;
- Assistance in preparation of funding applications.

Requirements:

- PhD degree earned within the past five years in Physics, Electrical/Mechanical Engineering, or a related field;
- First-hand experience in microfabrication, from process design to implementation, characterization, and troubleshooting;
- First-hand experience with experimental methods to characterize microdevices and electronics;
- First-hand experience with CAD tools to design and evaluate the performance of micro-devices;
- Ability to work in the lab, cleanroom, and field, including safely lifting and moving heavy objects;
- Demonstrated ability to work independently as well as collaboratively with others;
- Excellent communication skills (oral and written).

Desired qualifications include a subset of:

- Familiarity with interface circuit design (including the use of circuit simulators, PCB design and assembly, and electronic test and characterization methods)
- Background on the design and testing of inertial microsensors;
- Prior experience in MEMS packaging;
- Prior experience in closed-loop control of MEMS.

Additional information:

- Intelligent Sensing Laboratory: <https://sense.fas.sfu.ca/>
- SFU 4D LABS cleanroom facility: <https://www.4dlabs.ca/>
- Equity, Diversity, and Inclusion at SFU: <https://www.sfu.ca/edi.html>