



## Silicon photonics : 1 Ph. D. position and 1 post-doctoral position

### Agile infrared laser systems on silicon photonic chips

Photonic integrated circuits in silicon is a promising technology for low cost fabrication of autonomous or cooperative sensors. These photonic chips are expected to resolve several critical issues by providing small systems with densely integrated optical processing functions and little power consumption. The project aims at exploring one key element of these systems. Our goal is to design, fabricate and test tunable laser system integrated on silicon photonic chip in the short infrared band near 2  $\mu\text{m}$ . As a first step, we plan to investigate nonlinear frequency conversion in silicon on insulator waveguides.

Our laboratory will model and design the silicon photonic devices that will be fabricated by collaborators. Upon receiving the chip, we will perform a full experimental characterization with external laser sources before considering integration of lasers on chips. This research project will investigate fundamental research questions as well as applications to communications and sensing. This research is done in the context a strategic project grant that involves several industrial partners.

***We are looking for a PhD student and a post-doctoral researcher interested to join our team and acquire expertise in silicon photonic circuit and its application to sensing.*** The candidates will contribute to the design, modeling, simulation and testing of the devices. The research will take place at the Centre for Optics, Photonics and Lasers. The work will be codirected by Professors Sophie LaRochelle and Wei Shi of the Electrical and Computer Engineering Department.

In addition to excellent academic records at Bachelor and Master's degree level in Electrical Engineering, Engineering physics or Physics, the applicants should show genuine interest in science, exhibit leadership and demonstrate excellent oral and written communication skills. Please send your curriculum vitae, academic records, statement of interest and the name of three references to:



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***Canada Research Chair in Advanced Photonic Technologies for Communications***

Further information on the Chair program can be found at:

[www.gelgif.ulaval.ca/slarochelle](http://www.gelgif.ulaval.ca/slarochelle)

