



Contribution ID: 1071

Type: **Invited Speaker / Conférencier invité**

## **Integrated silicon photonics for quantum communication**

*Tuesday, 14 June 2016 13:45 (30 minutes)*

The surging progress in silicon photonics over the past decade has been driven by its potential deployment in low cost, high bandwidth, wavelength-division multiplexed short reach optical interconnections in datacenters. Many device level advances have been made in recent years, and the variety of high quality components that have become available now motivate extending the application of silicon photonic integrated circuits to quantum information.

In this talk, I will present my group's recent work on silicon photonics for quantum communication. I will describe high extinction ratio microring modulators and filters, the first polarization rotator-splitters and controllers in standard silicon photonic platforms, and a prototype of an integrated quantum key distribution transmitter for the BB84 protocol.

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**Session Classification:** T2-5 Photonics I: Applications (DAMOPEC-DPP) / Photonique I : applications (DPAMPC-DPP)

**Track Classification:** Division of Atomic, Molecular and Optical Physics, Canada / Division de la physique atomique, moléculaire et photonique, Canada (DAMOPEC-DPAMPC)