Postdoctoral Position – Integrated Quantum Optical Devices

The Department of Electronics (ELEC) at Carleton University, Ottawa, Canada, together with the National Research Council (NRC) of Canada, is accepting applications for a Post-Doctoral Research Fellow position dedicated to the design and fabrication of integrated quantum optical devices in a silicon nitride platform. The applicant should have research experience in material science, nanofabrication and photonic devices, supported by a good publication record. Knowledge of quantum optics will be considered an asset. The successful applicant will work with our Carleton-NRC team to first develop the silicon nitride materials platform followed by the design, nanofabrication and characterization of devices such as frequency combs and cavity resonators for applications in quantum key distribution and the enhancement rates of non-classical light sources. This position is supported by an external grant and is for a period of 2 years.

Candidates must have completed a Ph.D. degree in Engineering Physics, Electrical Engineering, Physics or in a closely related field. The candidate should have direct research experience and skills in the following areas:

- film deposition and growth of dielectrics and semiconductors, particularly in the area of low-pressure chemical vapor deposition (LPCVD)
- cleanroom processing and fabrication of photonic devices such as dry and wet etching, lithography and layout techniques, etc.
- material characterization techniques such as ellipsometer and film stress analysis
- coupled-mode, optical waveguide and micro-resonator theory and design

The successful applicant will collaborate closely and conduct research with personal at all levels within the Carleton and NRC groups. Additionality, the Fellow is expected to assist with conference and journal publications and reports. Excellent written and oral communication skills are essential to the position. Applications should include a CV, publication history and a cover letter clearly outlining how their part research and experience provide the necessary qualifications. Additionally, contact information for 3 references should be available upon request.

Carleton University is committed to EDI and fostering diversity within its community as a source of excellence, cultural enrichment, and social strength. We therefore welcome applications from underrepresented groups including, but not limited to: women; visible minorities; First Nations, Inuit and Métis peoples; persons with disabilities; and persons of any sexual orientation, gender identity and/or expression. Carleton understands that career paths vary. Legitimate career interruptions will in no way prejudice the assessment process and their impact will be carefully considered.

Please direct applications to Professor Connor Kupchak (connor.kupchak@carleton.ca) and Dr. Khaled Mnaymneh (khaled.mnaymneh@nrc.ca).