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Opening for a Postdoctoral Researcher in the Light-Matter Group at Polytechnique Montréal.

The Light-Matter Group at Polytechnique Montréal (www.light-matter.ca) currently has an **immediate opening for a Postdoctoral Researcher** with an application deadline of October 31st.

Polytechnique Montréal is an Engineering university located in the heart of Montréal, with an enrollment of nearly 10,000 students. Polytechnique values the diversity of its employees and adheres to an equal employment opportunity program for women, visible and ethnic minorities, Indigenous people and persons with disabilities. Polytechnique is the first Canadian university to have received the Parity Certification from Women in Governance and offers excellent working conditions, fostering work-life balance and the well-being of all its employees.

The **Light-Matter Group** studies the behavior of their elementary excitations (carriers, excitons, polaritons, phonons) in molecular and 2D semiconductors and develops optoelectronic (LEDs, photodetectors, lasers, solar cells) and quantum optical devices (quantum light sources, quantum simulators) based on these materials. The group is equipped with extensive fabrication (gloveboxes, UHV deposition cluster, thermal evaporator) and spectroscopy equipment (ultrafast time-resolved spectroscopy, single-molecule spectroscopy, mid-infrared spectroscopy). Team members also have access to >150M\$ in worldclass nanoscience infrastructure on Campus. Postdocs will be part of two Québec-wide research clusters: RQMP and INTRIQ, which organize biannual workshops, industry meetups, summer and winter schools, and networking events between students and industry across a broad range of topics.

Role: Quantum light holds great promise for ultra-precise spectroscopy and quantum information processing. The potential for improved sensitivity in the mid-infrared is particularly attractive given that this spectral range is home to the so-called molecular fingerprint region. However, very few sources of quantum light exist in this range. The postdoctoral researcher will use the large optical nonlinearities achievable in the vibrational strong light-matter coupling regime to realize on-demand single photons in the mid-infrared.

Expertise: The candidate should hold a PhD in physics, electrical engineering, materials science, physical chemistry (or a related field) and have experience in any (or many) of mid-infrared spectroscopy, ultrafast spectroscopy, single molecule spectroscopy, nanophotonics and quantum optics. We encourage all qualified candidates to apply, including women, BIPOC researchers, LGBTQIA2+ folx and scientists with disabilities. Accommodations can be provided upon request.

Applicants should contact Prof. Stéphane Kéna-Cohen (s.kena-cohen@polymtl.ca) with a cover letter and a copy of their CV.