

Quantum Experimentalist PhD Candidate

[Quantum Dot Optics]

About QBT

At Quantum Bridge Technologies (QBT) we are working on conventional and quantum technologies for the construction of the future quantum Internet; the new generation of communication infrastructures. To achieve this, we are tackling engineering and theoretical problems related to the generation and manipulation of quantum entanglement. In parallel to the development of Quantum Repeaters, QBT is developing core proprietary technologies to make current networks quantum resilient. The CTO of the company is Prof. Hoi-Kwong Lo of the University of Toronto and the University of Hong Kong, co-inventor of the all-photonic quantum repeater, and a leading scientist working on quantum communication and quantum technologies since the 1990s. The company has recently secured its seed investment round, and we are now building a team of research scientists and engineers who will shape the future of the company and will take leading roles at QBT. The company is based in Toronto and in Ottawa. This position will be based in Ottawa. The PhD will be affiliated to the University of Toronto.

Role Description

As a Quantum Experimentalist PhD Candidate at QBT, you will be joining a quantum optics research group that will work on the deterministic generation of photonic quantum cluster states using quantum dot emitters. The work will be done in close collaboration with our theory team, with experience in quantum information and condensed matter theory and your team will play a key role in driving future architectural decisions. The work is truly interdisciplinary and touches the core R&D business of Quantum Bridge.

The responsibilities for the role include:

- Join a team of experimental physicists and assist in the development of the quantum technology at the core of the all-photonic quantum repeater.
- Assist in the design and implementation of the experimental facility, including equipment specification and procurement.
- Interaction between the theory and experimental groups.
- Assist in the publication of scientific papers in peer-reviewed journals and attending scientific conferences

Qualifications and Experience

- Masters in Optical Physics, Electrical Engineering, or related field.
 - Experience with (or interest in) spectroscopy and spin control of semiconductor quantum dots.
 - Experience with (or interest in) emitter-cavity coupling and coherent optical control of qubits.
 - Experience with (or interest in) quantum dots, solid state quantum emitters, AMO physics or quantum electrodynamics.
 - Experience with (or interest in) handling cryogenics and vacuum systems.
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Contact us

If you think this position is for you, please send your CV to human.resources@quantumbridgetech.com and any additional information

outlining why you think this is the right role for you. We're looking forward to reading your application!

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