UNIVERSITY OF WATERLOO | IQC Institute for Quantum Computing

INSTITUTE FOR QUANTUM COMPUTING
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Non-Gaussian Microwave Quantum Optics

We seek motivated postdoctoral researchers to be part of new experimental projects in the Engineered Quantum System Laboratory (EQSL) at the Institute for Quantum Computing (IQC). Broadly, the projects focus on microwave quantum optics using superconducting circuits. There will be an emphasis on exploring phenomena beyond the Gaussian (linear) regime, looking to understand and exploit non-Gaussian (nonlinear) effects, including higher-order parametric effects. In particular, there will be a focus on understanding the interplay of quantum and non-Gaussian phenomena. In all of the projects, we seek to advance the state of the art in quantum technologies, with an emphasis on quantum sensing, while also more deeply understanding the fundamental physics that enables these technologies.

EQSL has dedicated equipment for the experiments as well as access to all nanofabrication tools necessary through the Quantum NanoFab. The NanoFab is part of the 285,000 square foot Quantum-Nano Center, constructed to hold IQC and the Waterloo Institute of Nanotechnology.

IQC, located at the University of Waterloo outside of Toronto, provides a vibrant research environment with interdisciplinary researchers coming from physics, engineering, chemistry, math and computer science. The Institute is dedicated to the advancement and development of quantum information science and quantum technology. The environment is also enhanced by our close association with our sister institution, the Perimeter Institute for Theoretical Physics.

The position is available to start immediately, but the actually starting time is negotiable. The positions will start at 1 + 1 or 2 years, depending on experience. The work is funded for 5 years.

The successful applicant should have (or be nearing completion of) a PhD in a field of physics or closely related discipline. Candidates should have experience in at least some of the following areas: superconducting quantum circuits, superconductivity, mesoscopic physics, nanofabrication, cryogenics, microwave technology. A high level of proficiency in written and spoken English is also a requirement.

Interested candidates should send their CV to Prof. Christopher Wilson at chris.wilson@uwaterloo.ca.