

Senior postdoc and/or assistant/associate professor positions at the Niels Bohr Institute, Copenhagen

In the [Quantum Photonics Group](#) at the [Niels Bohr Institute](#), University of Copenhagen we explore solid-state quantum emitters deterministically coupled to single photons by the aid of photonic nanostructures. We are embedded in the DNRF Center of Excellence [Hybrid Quantum Networks Hy-Q](#) that conducts research on the generation of photonic quantum hardware for the quantum internet. Specific research areas include: solid-state quantum emitters, quantum-information theory, and quantum optomechanics.

Research background

Solid-state photonic quantum systems have recently matured dramatically¹, and it now is feasible to merge small-scale quantum systems into larger quantum architectures. We exploit single quantum dots embedded in photonic nanostructures as qubits for quantum-information processing and have recently shown that the systems are now sufficiently mature to reach *Quantum Advantage*². Our research covers a broad spectrum from fabrication of nanophotonic structures, through quantum-information processing experiments, to in-depth theory.

Vacancies

We welcome applications from talented researchers with expertise within a broad area of competences:

1. Photonic quantum simulation and quantum computing
2. Photonic quantum networks and quantum communication with single photons.

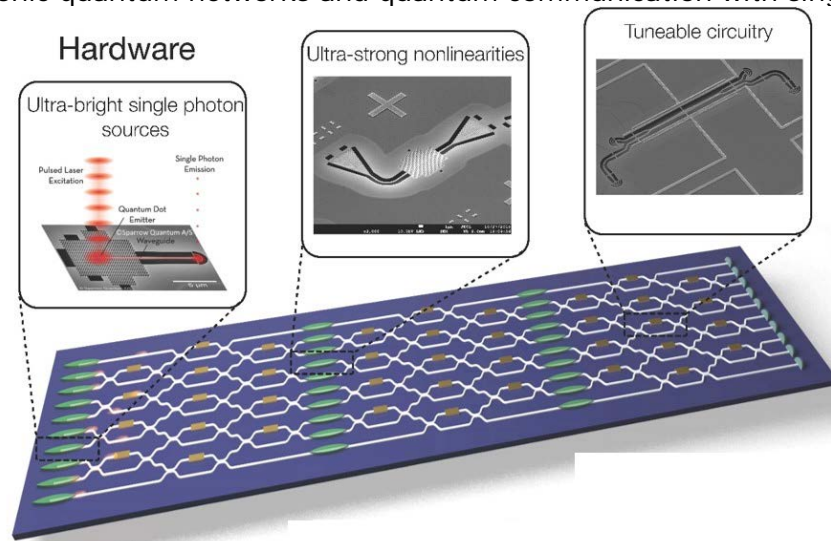


Illustration of advanced photonic circuit comprising deterministic single-photon source, photon nonlinear elements, and reconfigurability.

Further information

For further information, contact Prof. Peter Lodahl: lodahl@nbi.ku.dk, +45 20565303

¹ [Interfacing single photons and single quantum dots with photonic nanostructures](#), *Rev. Mod. Phys.* **87**, 347 (2015).

² [Scalable integrated single-photon source](#), *ArXiv*: 2003.08919 (2020).