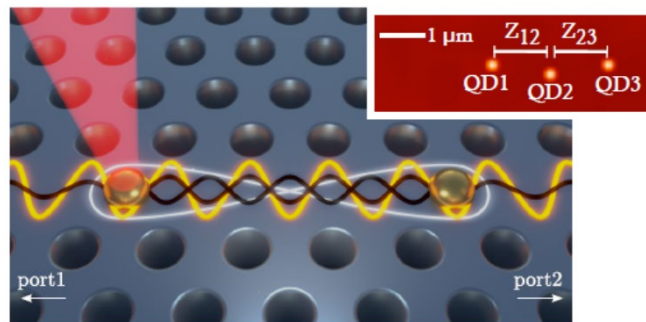


Highlights: Center for Hybrid Quantum Networks (Hy-Q)

Research highlights



The scientific highlight of 2022 has been the experimental realization of entanglement between two solid-state quantum emitters mediated by a nanophotonic waveguide. This was a result of a very close collaboration between Hy-Q researchers in experiment and theory and was published in *Science* in early 2023. This experiment is a stepping-stone for a range of advanced experiments, including the realization of complex multi-photon entanglement or photonic quantum gates. These are essential functionalities required to scale up the deterministic photon source technology towards advanced applications in quantum information processing. The figure above illustrates the photonic device developed for the experiments.



Outreach

National and international awareness about quantum science is constantly being raised. In 2022, Hy-Q was - as a leading quantum-science center - visited by numerous politicians, investors, science communicators, and other stakeholders.

The photograph above (left) shows director of IT Branchen Natasha Friis Saxberg (with Associate Professor Leonardo Midolo (left) and Professor Peter Lodahl), at the demonstration of the first quantum encrypted video link in Denmark between NBI and DTU. Head of the Board of Innovation Fund Denmark Anders Eldrup was present at DTU to establish the link with Saxberg.

The photograph above (right) illustrates the visit of NATO's Secretary General Jens Stoltenberg, Prime Minister Mette Frederiksen, and Minister for Industry, Business and Financial Affairs Morten Bødskov to Hy-Q's labs.