

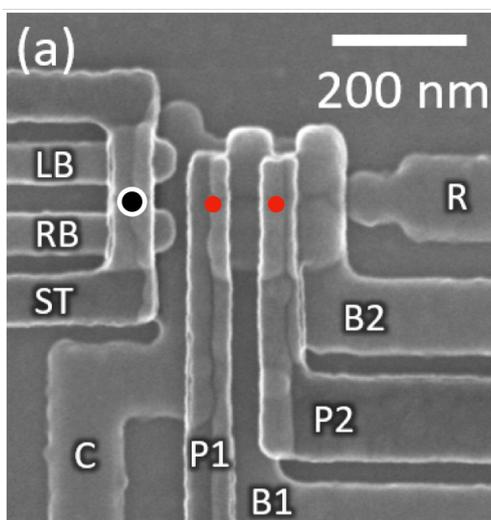


Master (or Bachelor) Project at Center for Quantum Devices

## Electrical characterization of foundry-fabricated spin qubits

Our spin qubit group implements quantum bits using single electron spins trapped in semiconductor quantum dots. Arrays of quantum dots not only provide a suitable platform for small quantum processors, but can also serve as quantum simulators of various processes, such as quantum chemistry.

Fabrication of our quantum dot samples is performed either inhouse in NBI's cleanroom, or at large-scale foundries such as IMEC (Belgium) and CEA-Leti (France). To learn more about our involvement with quantum large-scale integration in silicon, visit the QLSI homepage ([www.h2020-qlsi.eu](http://www.h2020-qlsi.eu)).



Top-view of two electron spins (red dots) controlled by gate electrodes (device fabricated at IMEC, Belgium). Right: Adiabatic demagnetization cryostat at QDev (manufactured by Kiutra, Germany).

This project for bachelor or masters students involves:

- Benchmarking of foundry-fabricated spin-qubit devices in a state-of-the-art adiabatic demagnetization cryostat at subkelvin temperatures.
- Measurement programming and automatization in the widely used QCoDeS Quantum Computing library for Python.
- Working in an international team and lab environment.

If you are interested in these or other projects related to spin qubits, contact **Ferdinand Kuemmeth** ([kuemmeth@nbi.dk](mailto:kuemmeth@nbi.dk)) or **Anasua Chatterjee** ([anasua.chatterjee@nbi.ku.dk](mailto:anasua.chatterjee@nbi.ku.dk)).

See all QDev student projects here:

