Masters Project in QDev:

Thermal transport in quantum Hall systems

A new Masters Project is available to experimentally investigate thermal transport in quantum Hall systems is available in the Center for Quantum Devices. The project aims to understand some subtle aspects of exotic carriers in the fractional quantum Hall regime, where excitations are neither fermions nor bosons, but anyons with fractional or even nonabelian (braiding) statistics. These properties are sometimes invisible in electrical transport but can be seen in the transport of heat through the device. You can read about a related experiment here: https://www.nature.com/articles/nphys2384.

Some background in condensed matter physics will help with reading, but more important is a hands-on approach in the lab.

You will learn the physics of semiconductors, quantum Hall effect, low-temperature physics, radio frequency control and readout, and of course reading and writing. Work with the the best equipment in condensed matter physics on a problem that the world cares about. Discuss physics with colleagues, become an experimental scientist.

If this project interests you, please contact Charles Marcus (marcus@nbi.dk) or Anasua Chatterjee (anasua.chatterjee@nbi.ku.dk).