

# Bachelor / Master Thesis:

## Cryogenic photonic link for Qubit

Recent advances in superconducting electronics have made quantum computers a feasible technology. Quantum computers have to be cooled down to a few millikelvin above absolute zero to observe and use quantum effects.

To minimize heating, fiber optics and an electro-optic modulators in the cryogenic chamber are an attractive option for transmitting data to the outside. One promising candidate for low-power operation are silicon organic hybrid (SOH) modulators.

During the thesis, a numerical investigation of the necessary modulator performance will be done. A data transmission experiment operating SOH modulators at cryogenic temperatures will be used to validate the simulation.

### Your tasks:

- Analysis and simulation of a cryogenic data link
- Developing and implementing a setup to test modulators at cryogenic temperatures
- Testing the performance of SOH modulators at cryogenic temperatures
- Data transmission experiment at cryogenic temperatures

### Interested? Please contact:

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