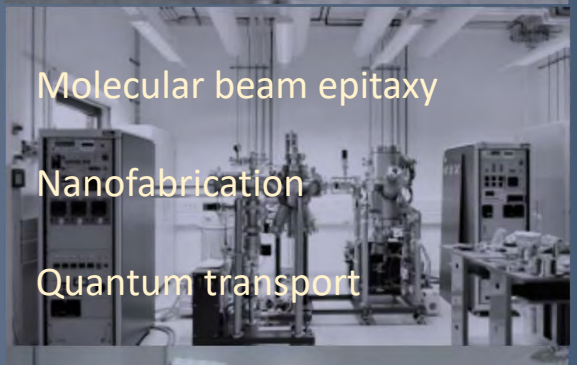
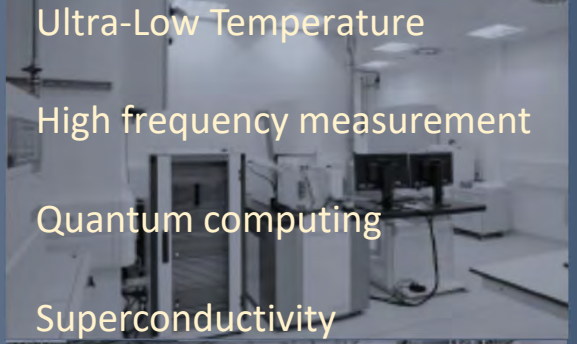
Topological Matter Laboratory Cologne





Postdoc/PhD Positions on

Topological Matter and Quantum Computing

The **Ando Lab in Cologne** works in the field of topological matter and is trying to realize topological quantum computing. To address this goal, we synergistically perform materials synthesis, nanodevice fabrication, and ultra-low-temperature measurements in the same lab. Several Postdoc/PhD positions are available through funding by ERC Advanced Grant, German Cluster of Excellence "ML4Q", and DFG-CRC.

Main research areas:

- **Fundamentals of topological matter**

Topological matter is a most fertile ground for new discoveries. Currently we focus on topological-insulator nanostructures and topological superconductors where Majorana fermions show up.

- **Topological quantum computing**

Topological qubits based on non-Abelian Majorana fermions are expected to be fault-tolerant. We will make prototypes of such qubits to perform proof-of-principle experiments by employing microwave techniques.

- **Topological devices**

To address the novel quantum phenomena expected for topological matter including non-Abelian statistics, we fabricate nanodevices in our own clean room and measure them at temperatures down to 10 mK.

We look for ambitious young people who want to participate in our challenge in these areas.
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