



Nanofabrication Facility

What we do

We develop recipes and new devices for different applications. At the moment our facility is focused on two main research studies:

- Spin qubits in Ge-based systems, self-assembled QDs and lithographically defined QDs in two dimensional hole gases (Katsaros's Group).
- Developing novel types of superconducting and photonic devices using advanced MEMS fabrication technologies (Fink's group).

Services and Methodologies Provided

The IST Austria Nanofabrication Facility is a state-of-the-art cleanroom fabrication facility. Our facility supports excellence research aimed at nanotechnology applications. Both near-term and long-term projects are being pursued.

- Cleanroom equipped with the state of the art for micro- and nanofabrication processing
- Specialized staff who guarantee the availability of processing equipment and the development of new processing
- Training and availability for all users

IST Austria

Am Campus 1, 3400 Klosterneuburg, Austria
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Plassys MEB 550S2 UHV

The MEB 550 S2 is a Ultra High Vacuum system evaporator with three chambers that works at 10^{-9} mbar.

<http://ist.ac.at/ssus/list-of-facilities/nanofabrication-facility/equipment/uhv-and-hv-evaporators/uhv-evaporator/>



MemsStart ORBIS Alpha Oxide Etch

HF vapor etch system is used to remove sacrificial silicon oxide layers, primarily to release silicon microstructures. The system allows the possibility of stiction-free etching and handles materials from sample sizes to 200mm.

<http://ist.ac.at/ssus/list-of-facilities/nanofabrication-facility/equipment/vapor-hf/>



RAITH EBPG5150 EBL

The EBPG5150 electron beam lithography system is designed for high-resolution and high-accuracy patterning of devices on semiconductor wafers.

- High current density Thermal Field Emission gun up to 100 kV
- Minimum feature size of less than 8 nm
- Rapid exposure 100 MHz pattern generator

<http://ist.ac.at/ssus/list-of-facilities/nanofabrication-facility/equipment/electron-beam-lithography-eb/>

Equipment

The Nanofabrication Facility consists of two cutting-edge cleanrooms for a total of ~400 sqm, which feature ISO 5 (class 100), ISO 6 (1000) and ISO 7 (10000) facilities and include two characterization laboratories areas of ~86 sqm.

The Facility accommodates the following processes:

- Optical and electron lithography for pattern definition
- Thin-film deposition of metals and isolators
- Dry etching for material removal using reactive gases
- Wet chemical etching
- Rapid Thermal annealing
- Inspection and characterization with optical, electron and force microscopes.
- Thickness measurements
- Dicing and bonding
- PDMS fabrication platform for microfluidics.

Contact and Location

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Institute of Science and Technology