

Vacuum Laboratory



Work in Progress

Setting up the vacuum laboratory is an ongoing project, and it is not yet openly available for use.



Contamination

It is not allowed to conduct any activity that may contaminate the vacuum laboratory unnecessarily. You can use the [Fjasekammer](#) for things like this.

OV has facilities for conducting experiments and projects in a (relatively) clean vacuum chamber. The laboratory is based around a [Varian 3119 vacuum chamber](#), "Mor Di", (240L)

- [Fjasekammer](#)
- [Hitachi TM-1000 electron microscope](#)
- [Misc. Electronics documentation; Pinouts, Datasheets](#)
- [NTNU Nanolab Facilities](#)
- [Pfeiffer/Balzers Omnistar GSD 300 O2 RGA \(Residual Gas Analyzer\)](#)
- [Possible suppliers](#)
- [Random Bullshit Deposition ideas](#)
- [Superconducting Nb-AlOx Process Development](#)
- [Varian 3119 Vacuum Chamber](#)

The Intention for the Vacuum Laboratory is to give OV-members the ability to perform their own thin film coatings: Making Mirrors, Sunglasses, Nitride Coatings, Circuit Boards on non-traditional materials, Basic Silicon CMOS devices and [Josephson Junction Voltage Standard \[WIP\]](#), etc. The Chamber may also be used for Vacuum Experimentation and verification for Satellite components, electron beam devices and applied physics experimentation.

Cleanliness protocols are expected to be upheld, but these are intentionally kept very relaxed.

Resources, Reading Materials

Online Resources

- Deposition Chart: [KJLC Materials Deposition Chart](#)
- Vacuum Tech Intro: [Pfeiffer Vacuum Know-How](#)
- Project Tracking: [OV-Trello Tomromkom](#)
- The OV-Slack Høyvakuum channel (ask someone)
- Vacuum & Deposition part Distributors: KJLC, LDS Vacuum

Online

- Ben Krasnow - <https://www.youtube.com/user/bkraz333/>
- Sam Zeelof - <http://sam.zeelof.xyz/>
- Fusor.net - <http://fusor.net/board/>

Books

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Current Status

Operational Status

- Main Deposition Chamber - "Mor Di":
 - ☐ Water Cooling System
 - ☒ Main Loop, Chiller
 - ☒ Helium Compressor
 - ☐ Manifold

☐ Chamber, Gun, Crystal Balance Cooling

☒ Power System

☒ Cryopump

☐ Possible Helium Refill

☐ Deposition Sources

☒ Thermal Deposition

☐ E-Beam Deposition

☐ Sputtering Deposition