ANNEX 1 - Price book for ACADEMIC PROJECTS At DTU Nanolab

Effective: January 1st - 2025

Main changes compared to last year's price book

- New PolyFabLab cleanroom
  From the beginning of 2025 DTU Nanolab opens our new cleanroom PolyFabLab for external users. The facility is mainly meant for polymer fabrication using 3D printing and UV lithography. We use the same price structure for commercial companies for both our cleanrooms.
- New prices
- Tool list updated

1 Table of Contents

2 General information

All prices are in Danish kroner without moms. All prices are subject to change.

Service from Nanolab	Unit	External project work, Danish academia[1]	Horizon 2020 projects[2]	Horizon Europe projects[2]	UK95 Projects[2]	Internal DTU projects[3]
Cleanroom access (below cap)[4]	Kr/hour	266+44% OH	266	333	300	0
Category A tools	Kr/hour	209+44% OH	209	258	234	0
Category B tools	Kr/hour	448+44% OH	448	550	496	0
Category C tools	Kr/hour	760+44% OH	760	884	841	0
Category D tools	Kr/hour	447+44% OH	447	569	493	0
Category E tools	Kr/hour	755+44% OH	755	915	773	0
Category P tools	Kr/hour	61+44% OH	61	69	65	0
Category S tools	Kr/hour	0	0	0	0	0
Nanolab assistance[5]	Kr/hour	387+ 44% OH	387	387	387	0
Materials		At cost+44% OH	At cost	At cost	At cost	At cost

Note 1, Use of DTU Nanolab for Research projects where the DTU partner does not hold the budget or other Danish universities are charged with the DTU cost plus overhead of 44%. The overhead of 44% is an integral part of the price and reflects the cost beyond direct cost. In special cases DTU Nanolab's Director can decide on another rate than 44% after discussion with the principal investigator.

Note 2, The prices shown in the monthly specifications sent from DTU Nanolab is the Horizon 2020 prices. DTU AØR is responsible for charging to the correct amount according to project type.
The prices are excl. overhead.

Note 3, DTU management have decided to support all internal projects. They are paid for as long as the department meets its required external funding for DTU Nanolab activities.

Note 4,

- The cap is calculated per individual and is at 20 hours per month, usage above the cap is charged as 0 kr/h.
- A maximum of 6 hours is registered per swipe. If a person forgets to swipe out, no more than 6 hours will be charged.
- Category F tools are included in the cost of cleanroom access.

Note 5, Cleanroom access cost will be added for work done in the cleanroom.

Service	Value	Details
Maskorder "Review" and help ordering	time used	DTU Nanolab assistance
Introductory package training	1.5 hour	DTU Nanolab assistance
Shelves for work in progress	1 m²	Area rent – note 6,7
Floor space in cleanroom and subfab/basement (mix of white and grey space)	1 m²	Area rent – note 7
Locker	0,25 m²	Area rent – note 7
Shelf in chemical cabinet in basement	0,5 m²	Area rent – note 7
Storage shelf in basement	0,25 m²	Area rent – note 7
Issuing a guest-card when user has forgotten own card	0.5 hour	DTU Nanolab assistance

Note 6, The area of a shelf rack is calculated as the floor area covered by the rack and 110 cm access in front. For a single shelf divide this by 5 (approximate average number of shelves in a rack) to get the value.

Note 7, Limited amount of this item, subject to availability, minimum period is 6 months

3 Specific materials priced at cost

Precious metal costs	Cost Price	Details
Gold	4.61	kr/nm
Platinum	2.94	kr/nm
Palladium	2.00	kr/nm

The cost for precious metal is for every nanometer deposited regardless of whether it is on the sample or shutter.

Photoresists	Cost Price	Details
DUV42S-6	7.56	kr/g
KRF M35G	2.44	kr/g
KRF M230Y	2.46	kr/g

The mass of resist is measured by internal scales in the Gamma tools.

ALD sources	Cost Price	Details
TMA	6.19	kr/s
DEZ	13.04	kr/s
TiCl	1.88	kr/s
TEMAHf	0.25	kr/s

The time is measured as the total time open to a given source during a deposition. So for instance if the TMA pulse time in a given run is 0.1 s and a total of 500 pulses are used, that equates to 50 s of TMA source for that run.

4 Equipment capabilities and charging categories

At DTU Nanolab we have equipment that supports most nanofabrication and -characterization techniques. In the following we present our current portfolio of tools and the associated charging category. We have the tools divided up into nine groups depending on their processing capability. We have also added a subgroup to better indicate the specific purpose of the tool.
Most tools are located in our Cleanroom building 346 except for the nano-preparation and -characterization tools in section 4.6 which is located in building 307 or 314.
Tools in category R are not for general use. They are owned by a research group or a company. If you are interested in one of these tools please contact Fabrication Support (*sales@nanolab.dtu.dk*) and we can facilitate a contact.
Some tools are charged based on the booked time they are indicated with "Yes" in the column "By booking"; otherwise charging is based on logged time.

4.1 Lithography tools

We use lithography as a means to add or remove material in specific areas to create a pattern on a surface. DTU Nanolab supports several types of lithography spanning linewidth resolutions from around 10 nm and up.
The most common way of lithography is by using light to expose a sensitive film (resist) that were spun on a wafer/sample to obtain a thin uniform film. The pattern is revealed by placing the sample with the film in a developer. The developer is in this case typically a chemical etching solution consisting of a base and water.
Our standard tools for lithography uses UV light with a wavelength of 365 nm to 410 nm and you can typically achieve a line resolution of around 1-2 µm. Exposure can be done using our mask aligner where the light passes a glass mask with the pattern defined in a chromium pattern or using our Mask Less Aligners (MLA) where the pattern only exists as a data file and the pattern is made during exposure using an advanced electro-optical system.
To obtain a better resolution please find more information in section 4.9.

Find more information about lithography in our LabAdviser using this link
https://labadviser.nanolab.dtu.dk/index.php?title=Specific_Process_Knowledge/Lithography

Name	LM nr	Category	sub group
2PP printer	1.038	R	
Aligner: MA6 - 2	1.053	A	Aligner
Aligner: Maskless 01 (MLA1)	1.075	A	Aligner
Aligner: Maskless 02 (MLA2)	1.078	A	Aligner
Aligner: Maskless 03 (MLA3)	1.081	A	Aligner
Beamer PC - external	1.093	F	PC
Developer: SU8	1.024	F	Developer
Developer: SU8 (Wet Bench)	1.092	F	Developer
Developer: TMAH Manual	1.049	A	Developer
Developer: TMAH UV-lithography	1.050	A	Developer
Fume hood 09: UV development	1.067	F	Developer
Fume hood 10: e-beam development	1.068	F	Developer
Fume hood 11: Lithography cleaning	1.074	F	

Name	LM nr	Category	sub group
Hotplate 1 (SU8)	1.014	F	hotplate
Hotplate 2 (SU8)	1.015	F	hotplate
Hotplate: 90-110C	1.052	F	hotplate
Imprinter 01	1.065	A	Imprinter
Imprinter 03	1.096	A	Imprinter
Lift-off	1.060	A	
Micro Transfer Printer	1.090	A	
MVD	1.030	A	
Oven 250C	1.018	F	Oven
Oven 250C for burned resist	1.019	F	Oven
Oven 90C	1.016	F	Oven
Oven: 110 - 250C	1.017	F	Oven
Oven: HMDS - 2	1.054	F	Oven
Plasma Asher 4	1.094	F	Plasma asher
Plasma Asher 5	1.095	F	Plasma asher
Plasma Asher 3: Descum	7.021	A	
Program oven	1.020	F	Oven
Resist strip	1.061	F	
Spin Coater: Gamma e-beam & UV	1.071	A	Resist coater
Spin Coater: Gamma UV	1.055	A	Resist coater
Spin Coater: Labspin 02	1.057	A	Resist coater
Spin Coater: LabSpin 03	1.063	A	Resist coater
Spin Coater: RCD8	1.056	A	Resist coater
Spin coater: Süss Stepper	1.041	A	Resist coater
Spray Coater	1.042	A	Resist coater
Wafer Bonder 02	1.058	B	Wafer bonder
Wafer Bonder 03	1.077	A	Wafer bonder
Wet bench 06: Resist strip	1.069	F	
Wet bench 07: Lift-off	1.070	F	
Wet bench 08: Spinner	1.072	F	
Wet bench 09: Spinner	1.073	F	
Wet bench 10: Developer	1.097	F	

4.2 Thin Film tools

There are many different methods to create thin films on samples. In this context we generally think of films having a layer thickness from one atomic layer up to a few micrometers and in rare cases up to 0.5 mm (for the electroplating tools).
The different techniques are usually named using an abbreviation like PVD (Physical Vapor Deposition), LPCVD (Low Pressure Chemical Vapor Deposition), PECVD (Plasma Enhanced Chemical Vapor Deposition) and ALD (Atomic Layer Deposition) and each has their pros and cons.

Find more information about deposition tools and techniques in LabAdviser using this link
https://labadviser.nanolab.dtu.dk/index.php?title=Specific_Process_Knowledge/Thin_film_deposition

Name	LM nr	Category	sub group	Pay by booking
ALD 1	2.021	B	ALD	
ALD 2 (PEALD)	2.023	B	ALD	
E-Beam Evaporator (10-pockets)	2.035	B	PVD; evaporation	
E-Beam Evaporator (Temescal)	2.029	B	PVD; evaporation	
Furnace: LPCVD Nitride (4) (B2)	2.012	B	LPCVD	
Furnace: LPCVD Nitride (6) (E3)	2.015	B	LPCVD	
Furnace: LPCVD Poly-Si (4) (B4)	2.010	B	LPCVD	
Furnace: LPCVD Poly-Si (6) (E2)	2.019	B	LPCVD	
Furnace: LPCVD TEOS (B3)	2.011	B	LPCVD	
PECVD3	2.009	B	PECVD	
PECVD4	2.024	B	PECVD	
Proline 200	2.032	B	PVD; Sputtering	
Sputter coater 03	2.026	B	PVD; Sputtering	
Sputter Coater 04	2.028	F	PVD; Sputtering	
Sputter-System Metal-Nitride(PC3)	2.031	B	PVD; Sputtering	
Sputter-System Metal-Oxide(PC1)	2.030	B	PVD; Sputtering	
Sputter-System(Lesker)	2.014	B	PVD; Sputtering	
Thermal Evaporator	2.027	B	PVD; evaporator	

4.3 Etch tools

Etching is a common way to remove material. We provide both wet and dry etching techniques. Wet etching is typically done using either a base or and acid to remove a selected material. One good thing about wet etching is that you can get a good selectivity so that only the material you want to remove is actually removed. However, wet etching is in most cases also isotropic meaning that the removal rate is the same in all directions. If you etch through a hole on a surface you will get under etching and sloped (rounded) walls. We provide both specialized wet stations for commonly used etchants and fume hoods for safe handling and etching in beakers.
Dry etching usually involves a vacuum chamber supplied with selected gasses and a plasma to make these gasses reactive. It is controlled and monitored using a computer. This gives a very good control of the process which you can vary from being very “wet etch” like to be more “physical” using bombardment of the surface with ions and radicals to remove material. You have better directionally with no under etching the more “physical” the process is. At the same time you will, however, loose selectivity.

Find more information about wet and dry etching tools and techniques in LabAdviser using this link
https://labadviser.nanolab.dtu.dk/index.php?title=Specific_Process_Knowledge/Etch

Name	LM nr	Category	sub group
Aluminium Etch	3.041	F	Wet etch
AOE	3.001	B	Dry etch
ASE	3.002	B	Dry etch
Critical Point Dryer	3.025	A	
DRIE-Pegasus	3.027	B	Dry etch
DRIE-Pegasus 2	3.044	B	Dry etch

Name	LM nr	Category	sub group
DRIE-Pegasus 3	3.051	B	Dry etch
DRIE-Pegasus 4	3.052	B	Dry etch
Fume hood 01: Acids/bases	3.031	F	Wet etch
Fume hood 02: Acids/bases	3.032	F	Wet etch
Fume hood 05: Special purpose & nanoparticles	3.033	F	
Fume hood 06: Si etch	3.034	F	Wet etch
Fume hood 07: III-V acids/bases	3.035	F	Wet etch
Fume Hood 12 (Standard clean)	3.057	F	Wet etch
Fume Hood(Service Area)	3.017	F	Wet etch
Fumehood(Bases)	3.021	F	Wet etch
Fumehood(Manual Spinner)	3.020	F	Wet etch
HF Clean (Fume hood (RCA))	3.026	F	Wet etch
HF Vapour Phase Etcher 01	3.053	B	Wet etch
IBE/IBSD Ionfab 300	3.029	B	Dry etch
ICP Metal Etch	3.028	B	Dry etch
III-V ICP	3.055	B	Dry etch
III-V RIE	3.056	B	Dry etch
Nitride etch: H3PO4	3.037	A	Wet etch
Oxide etch 1: BHF	3.042	F	Wet etch
Oxide etch 2: BHF (clean)	3.038	F	Wet etch
Oxide etch 3: 10% HF	3.040	F	Wet etch
PCB Etch	3.030	R	
Poly Si etch	3.039	F	Wet etch
Si Etch 1: KOH	3.036	A	Wet etch
Si Etch 2: KOH	3.043	A	Wet etch
Si Etch 3: KOH	3.045	A	Wet etch
Wet bench 01: Si etch	3.046	F	Wet etch
Wet bench 02: Nitride etch	3.047	F	Wet etch
Wet bench 04: Oxide & poly etch	3.048	F	Wet etch
Wet bench 05: Al etch	3.049	F	Wet etch
Work space in Fume Hood 06	3.050	F	Wet etch

4.4 Wafer cleaning tools

In our processing it is very important to keep all surfaces clean of any contaminants due to the fine patterns and the use of different materials and chemicals. We therefor provides a range of tools and chemical benches/fume hoods to clean wafers and samples.

Find more information about wafer cleaning techniques in LabAdviser using this link
https://labadviser.nanolab.dtu.dk/index.php?title=Specific_Process_Knowledge/Wafer_cleaning

Name	LM nr	Category	sub group
Box washer	4.018	F	Wet clean
Buffered HF-Predep	4.016	F	Wet clean
Cleaning bench	4.022	F	Wet clean
Cleaning Bench PolyFabLab	4.036	F	Wet clean

Name	LM nr	Category	sub group
Fume hood 03: Solvents	4.026	F	Wet clean
Fume hood 04: Solvents	4.027	F	Wet clean
Fume hood 08: III-V solvents	4.028	F	Wet clean
Fumehood(Cleaning)	4.023	F	Wet clean
Fumehood Solvents 1 (PolyFabLab)	4.037	F	Wet clean
Fumehood(Solvent 11)	4.024	F	Wet clean
Fumehood(Solvent 12)	4.025	F	Wet clean
HF 1% - RCA	4.015	F	Wet clean
Mask Cleaning	4.029	F	Wet clean
Post CMP cleaner	4.034	A	Wet clean
RCA (4" ,6")	4.014	F	Wet clean
RCA spin dryer	4.020	A	Drying
Spin dryer 2	4.005	F	Drying
Spin dryer 3	4.013	F	Drying
Spin dryer 5 (4", 6")	4.032	F	Drying
Spin dryer 6 (8")	4.021	A	Drying
Wafer Cleaning	4.030	F	Wet clean
Wet bench 03: Wafer and mask cleaning	4.033	F	Wet clean

4.5 Thermal process tools

One of the basic processes in Silicon microfabrication is the ability to form a very good insulating layer on top of the semiconductor. This is done in a thermal process where you subject the silicon wafer to moisture or dry oxygen at a high temperature around 1000°C. This oxidizes the surface and creates a silicon dioxide layer out of the topmost silicon atoms. This is an extremely well controlled process and creates SiO_2 of high optical, chemical and physical quality. By patterning the surface and etching the SiO_2 you can also use the remaining SiO_2 layer as a barrier to control diffusion of selected impurity atoms to create n- and p-type Silicon. Our range of furnaces supports both this process but also other processes for wafer bonding and thermal treatment of samples.

Find more information about oxidation and thermal treatment tools in LabAdviser using this link
https://labadviser.nanolab.dtu.dk/index.php?title=Specific_Process_Knowledge/Thermal_Process

Name	LM nr	Category	sub group
BCB Curing Oven	5.015	A	Annealing
Furnace: Al-Anneal (C4)	5.005	A	Annealing
Furnace: Anneal-bond (C3)	5.008	A	Annealing
Furnace: Anneal-oxide (C1)	5.006	A	Annealing
Furnace: Boron Drive-in and Pre-dep (A1)	5.004	A	Oxidation
Furnace: Gate Oxide (A2)	5.003	A	Oxidation
Furnace: General Purpose Annealing (C2)	5.007	A	Annealing
Furnace: Oxidation (8) (E1)	5.019	A	Oxidation
Furnace: Phosphorus Drive-in (A3)	5.002	A	Oxidation
Furnace: Phosphorus Predep (A4)	5.001	A	Oxidation
Furnace: Resist Pyrolysis	5.016	F	Annealing

RTP Annealsys	5.017	R	Annealing
RTP2 Jipelec	5.018	A	Annealing

4.6 SEM/TEM Preparation and Characterization Tools (located in building 307/314)

DTU Nanolab has a long tradition of research and development of Scanning- and Transmission Electron Microscopy (SEM and TEM) using advanced detectors and in-situ measurements techniques. Currently we are also expanding our capabilities to prepare soft matter tissues and samples.

Find more information about our SEM/TEM preparation and characterization tools in LabAdviser using this link
https://labadviser.nanolab.dtu.dk/index.php?title=LabAdviser/314

Name	LM nr	Category	sub group	Pay by booking
AFEG 250 Analytical ESEM	6.018	D	SEM	Yes
Carbon Coater	6.014	P	prep	
Coater EM ACE600 B314	6.046	P	Prep	
Cryo Holder ST	6.021	P	prep	
DENS Wildfire	6.042	P	prep	
DENSsolutions Climate	6.036	R	TEM	
EM ACE600 Coater Softmatter	6.043	P	Prep	
EM AFS2 Freeze substitution	6.044	P	Prep	
EM CPD300 Critical Point Dryer	6.024	P	prep	
EM GP2 Plunge freezer	6.019	P	prep	
EM ICE High pressure freezer	6.045	P	Prep	
EM UC7/FC7 Ultramicrotome	6.023	P	prep	
Fishione Ion Milling	6.033	P	prep	
FlatQUAD detector	6.040	E	SEM	
Helios Hydra PFIB	6.038	E	SEM	Yes
Helios NanoLAB 600	6.005	E	SEM	Yes
Minitom Saw	6.028	P	prep	
Nano Mill	6.000	P	prep	Yes
Nova NanoSEM 600	6.011	E	SEM	Yes
Olympus BX51	6.022	P		
Olympus BX51 stage	6.025	P		
Protochips Fusion	6.037	P	TEM	
Pumping cube	6.001	P		
QEMSCAN	6.017	R	SEM	
QFEG 200 Cryo ESEM	6.003	D	SEM	Yes
Quorum Coater	6.013	P	prep	
Remote Access Laptop 1	6.035	R		
RMC MT-7 Microtome	6.034	P	prep	
Spectra Ultra	6.042	E	TEM	Yes
TechPrep	6.027	P	prep	
Tecnai T12 BioTwin	6.015	D	TEM	Yes
Tecnai T20 G2	6.006	D	TEM	

Titan E-Cell 80-300ST	6.008	E	TEM	Yes
Well wire saw	6.030	P	prep	

4.7 Backend tools

We have a number of tools dedicated to separating wafers into chips, packaging of these or other kind of treatment. These tools are typical located outside of the Cleanroom and used as the last step of the process.

Find more information about our Backend processing tools in LabAdviser using this link
https://labadviser.nanolab.dtu.dk/index.php?title=Specific_Process_Knowledge/Back-end_processing

Name	LM nr	Category	sub group
3D Printer	7.020	R	
3D Printer 02 (BMF S140)	7.035	R	
3D Printer 03 (BMF S240)	7.036	R	
3D Printer 04 (BMF S230)	7.037	R	
Ball wire-bonder	7.012	A	Packaging
Cleaver: Flex Scribe	7.029	F	Dicing
Cleaver: Flip Scribe	7.028	F	Dicing
Cleaver: Lattice Axe	7.027	F	Dicing
Dicing Saw DAD321 (old)	7.006	A	Dicing
Dicing saw DAD3241 - silicon dicing only	7.030	A	Dicing
Die-bonder	7.011	A	Packaging
Hot embosser 1	7.025	R	
Laser Micromachining Tool	7.013	A	
Polisher/CMP	7.024	A	
Stylus profiler: Dektak 150	7.026	F	
TPT Wire Bonder	7.007	A	Packaging
Vacuum sealer: Boss	7.033	F	Packaging
Vacuum sealer: Jollygaz	7.016	F	Packaging
Wafer Cleaner Disco DCS1441	7.031	F	Dicing
Wire bonder: TPT HB100	7.034	A	Packaging

4.8 Cleanroom characterization tools

In order to verify that you are processing what you intend to fabricate you need inline inspection and characterization equipment. Our Cleanroom is equipped with all standard nanotechnology inspection tools. We also have a range of duplicated or other tools placed outside the Cleanroom (many in the basement of building 346) for further inspection of fabricated devices.

Find more information about our Cleanroom Characterization tools in LabAdviser using this link
https://labadviser.nanolab.dtu.dk/index.php?title=Specific_Process_Knowledge/Characterization

Name	LM nr	Category	sub group
AFM Icon-PT 1	8.048	A	Profiling
AFM Icon-PT 2	8.058	A	Profiling
CV-profiler	8.042	F	Profiling
Dektak 3ST stylus profiler	8.070	F	Profiling
DektakXTA	8.040	F	Profiling

Name	LM nr	Category	sub group
Drop Shape Analyzer 02	8.070	F	
Ellipsometer M-2000V	8.024	F	Optical
Ellipsometer VASE	8.045	F	Optical
Filmtek	8.018	F	Optical
Four Point Probe	8.014	F	Electrical
Four point probe - Jandel	8.060	F	Electrical
Goniometer - contact angle meter	8.075	R	Optical
Hardness tester	8.057	F	
IR-Camera	8.010	F	Optical
Leica INM 100 (yellow filter)	8.033	F	Optical
Leica S8 APO	8.030	F	Optical
Leitz Medilux	8.032	F	Optical
Lifetime scanner MDPmap	8.049	F	Electrical
Microscope: Nikon ECLIPSE L200 1	8.025	F	Optical
Microscope: Nikon ECLIPSE L200 2	8.044	F	Optical
Microscope: Nikon ECLIPSE L200N 3	8.053	F	Optical
Microscope: Nikon ECLIPSE L200N 4	8.054	F	Optical
Microscope: NILT Nikon L300N	8.065	R	Optical
Microscope: Zeiss Axiotron 2	8.043	F	Optical
Microscope: Zeiss Jenatech (particle meas.)	8.034	F	Optical
MicroSpectroPhotometer (Craic 20/30 PV)	8.066	A	Optical
NanoprobeSystem_miBots	8.069	F	Electrical
Nikon ME 600	8.037	F	Optical
Noco IR microscope	8.035	F	Optical
Optical Microscope 11	8.041	P	Optical
Optical Profiler (Filmetrics)	8.064	A	Optical
Optical Profiler (Sensofar S Neox)	8.068	F	Optical
Particle Scanner Takano	8.073	A	Optical
PL-mapper	8.071	A	Optical
Probe station 3 - EPS150Triax	8.051	F	Electrical
Probe station 4: MPS150	8.080	A	
SEM Gemini 1	8.072	D	SEM
SEM Supra 1	8.026	D	SEM
SEM Supra 2	8.047	D	SEM
SEM Supra 3	8.052	D	SEM
SEM Tabletop 1	8.055	A	SEM
Stylus Profiler (Tencor P17)	8.067	F	Profiling
Thickness measurer	8.021	F	
XPS K-Alpha	8.027	A	
XPS Nexsa	8.062	A	
XRD Powder	8.061	A	
XRD SmartLab	8.056	A	
Zeiss Jenatech (strain)	8.028	F	Optical

4.9 E-beam writer & DUV stepper tools

To achieve patterns with a resolution of better than 1 µm you can use our DUV stepper. Here the pattern is again defined in a glass mask with a chromium layer and the exposure is done using DUV light with a wavelength of 248 nm and an optical system that reduces the pattern on the mask with a factor of 5. In this way a resolution of around 200 nm is possible and since the machine has automatic wafer loading a high throughput of wafers can be achieved.
The finest patterns are obtained using e-beam lithography where a beam of electrons exposes an electron sensitive resist followed by development in a solvent. In this way a resolution of down to 10 nm is possible.

Find more information about our e-beam writer and DUV Stepper tools in LabAdviser using these links
https://labadviser.nanolab.dtu.dk/index.php?title=Specific_Process_Knowledge/Lithography/EBeamLithography
https://labadviser.nanolab.dtu.dk/index.php?title=Specific_Process_Knowledge/Lithography/DUVStepperLithography

Name	LM nr	Category	sub group
Developer: E-beam 02	9.012	A	Developer
Developer: TMAH Manual 02	9.008	A	Developer
Developer: TMAH Stepper	9.007	A	Developer
DUV Stepper	9.003	C	Exposure
E-Beam Writer 9500	9.004	C	Exposure
Fume Hood (Stepper)	9.005	F	
Prealigner 02	9.009	F	
Raith e-LINE	9.010	D	Exposure

5 Tool changes

A vast number of DTU Nanolab's tools can operate with different substrate sizes, chucks, materials or similarly. The consequences of various changes are described in the following sections. Regarding pricing, all scheduled changes are included in the tool cost but all non-scheduled changes result in a specific charge.

5.1 Scheduled routine changes

Some tools are changed on a weekly basis. To request a change a mail must be send to a "Change responsible", who is in charge of the change plan for the tool. The change responsible will return by email to acknowledge the request and inform about when the request can be met. When we have made the change to the tool, we update the status log in LabManager.

Scheduled routinely changed tools	LM ID	Routine change	Cost (DTU Nanolab assistance)	Change responsible e-mail
Temescal	2.029	Metals	2 hours	metal@nanolab.dtu.dk
Sputter-System Metal-Oxide	2.030	Materials	2 hours	metal@nanolab.dtu.dk
Sputter-System Metal-Nitride	2.031	Materials	2 hours	metal@nanolab.dtu.dk
Sputter System (Lesker)	2.014	Materials	2 hours	metal@nanolab.dtu.dk
Dicer DAD321	7.006	Dicing blade	1 hour	CustomerSupport@nanolab.dtu.dk
Dicer DAD3241	7.030	Dicing blade	1 hour	CustomerSupport@nanolab.dtu.dk