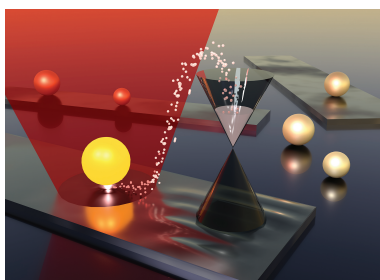


Status of the CHYN Clean Room

Prof. Dr. M. Rübhausen

Diverse Research



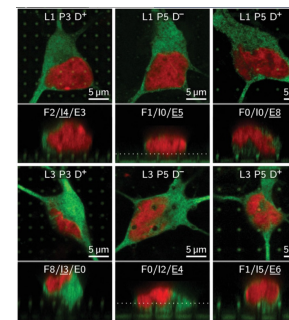
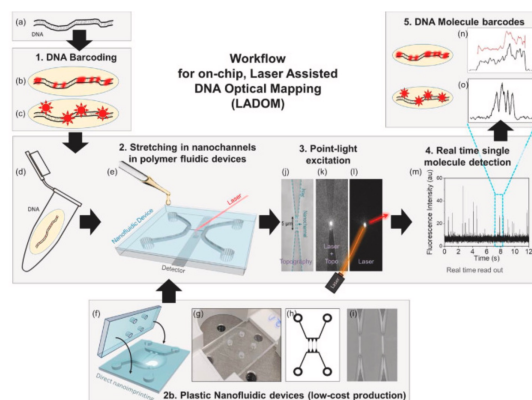
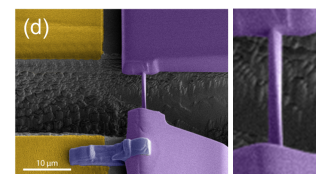
Showcasing research from Prof. M. Rübhausen's group at the Center for Free-Electron Laser Science (University of Hamburg), Hamburg, Germany.
Plasmonic hot carrier injection from single gold nanoparticles into topological insulator Bi₂Se₃ nanoribbons
With the aid of nanoscopic Raman spectroscopy, we track the interaction between injected hot electrons filling the Dirac cone of Bi₂Se₃ nanoribbons and low energy surface sensitive phonons.



rsc.li/nanoscale



- Quantum Nano Materials
- Bio-Hybrid Nano Materials
- Semiconductor Devices, Science, and Technology
- X-Ray Optics and X-Ray Devices
- Nanofluidic Devices and Detection
- Quantum Information



Relaunch of the CRR

- 22.09.2022 New CRR-Board is being established and confirmed by the user assembly on the 17.02.2023. (Dr. I. Frenandez-Cuesta, Prof. Dr. R. Blick, Prof. Dr. M. Rübhausen (UHH – Speaker of the board); Prof. Dr. A. Stierle (DESY), Prof. Dr. P. Moll (MPSD/MPI). Since then monthly board meetings and a clean up day in the CRR-facility have taken place.
- Responsibilities in the CRR have been reorganized, SOP's and Gefährungsbeurteilungen have been established.
- Access-management has been established. /General Safety Trainings have been established.
- Facility costs have been identified – finances have been updated. Finances are still being sorted out – collaboration contracts have been drafted (UHH/DESY/MPG).
- Since then more than **80 users** have been trained in the new practices of the CRR (mostly UHH). **40 active users. User Meetings have been organized.**
- Current operational status at about 75 % expected to reach > 90 % by the end of this year. 13 out of 15 instruments can be operated.
- We expect to increase the number of tools from 15 -> 18 or 20 in 2023.

Relaunch of the CRR

Equipment Overview

Search table for... 

Name	+	Room	+	Manufacturer	+	Model	+	Maintenance contract	+	Next maintenance	Status	+	Actions
☐ Focused Ion Beam		FIB Room - Groundfloor Chyn		Carl Zeiss		Crossbeam 550		No contract.		05/06/2023-08:00	Available		  
☐ Hood 1		Yellow Light		null		null		No contract.		Not scheduled.	Available		  
☐ Hood 2		Yellow Light		null		null		No contract.		Not scheduled.	Available		  
☐ Nanoimprint Lithography				EVG		EVG 501		No contract.		Not scheduled.	Available		  
☐ Physical Vapour Deposition System				CREAVAC		CREAMNET 450 ebeam S3		No contract.		Not scheduled.	Unavailable		  
☐ Plasma Barrel		white room		Tepla		100-E Plasma System		No contract.		Not scheduled.	Available		  
☐ Raith Voyager				Raith		Voyager		No contract.		Not scheduled.	Available		  
☐ Reactive Ion Etcher				Sentech		SI 500		No contract.		Not scheduled.	Available		  
☐ SUSS Maskaligner				SUSS MicroTec		MJB4		No contract.		Not scheduled.	Available		  
☐ Silane Oven				Thermo Fisher Scientific		Vacutherm 10664142		No contract.		Not scheduled.	Available		  

Rows per page: 10 

1 2

Showing 1-10 of 15

Relaunch of the CRR

Equipment Overview

Search table for...

Name	+	Room	+	Manufacturer	+	Model	+	Maintenance contract	+	Next maintenance	Status	+	Actions
☐ UV-O Cleaner				Jelight Comany Inc.		144AX		No contract.		Not scheduled.	Available		
☐ Wet Bench 4 (optical lithography)		Yellow Light		null		null		No contract.		Not scheduled.	Available		
☐ Wetbench 1 (E-beam lithography)		Yellow Light		null		null		No contract.		Not scheduled.	Available		
☐ Wetbench 2 (Iron Nitrate process etc.)		Yellow Light		null		null		No contract.		Not scheduled.	Available		
☐ Wetbench 3		Yellow Light		null		null		No contract.		Not scheduled.	Unavailable		

- Additional PVD
- Additional Laser Writer
- Additional Sputtering
- Additional Etching

CRR Board



Robert Blick (UHH)



Philip Moll (MPSD)



Andreas Stierle (DESY)



Irene Fernandez-Cuesta (UHH)



Michael Rübhausen (UHH / Speaker of the Board)

How does it look ?

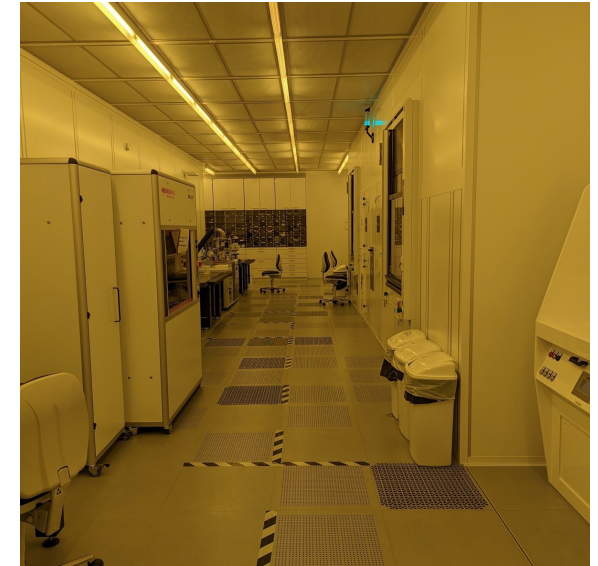
Dressing and transfer



Etching and deposition



Laser writing and wet chemistry

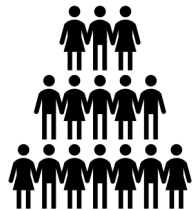


Additional Equipment also „outside the main rooms“ such as FIB / E-beam

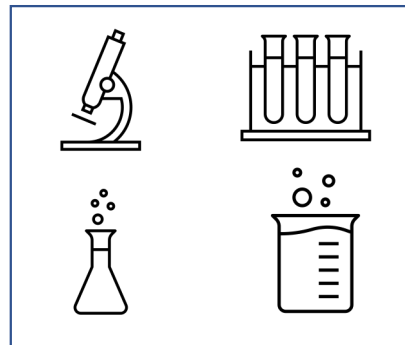
Access to the CRR

Step 1:

User General Safety Training



General Access to Booking Tool and CRR
(However – no booking yet possible)



- CRR provides information on the available tools SOP's and standards
- User is now visible for the instructors
- User can contact responsible persons
- User receives information on the process flow applications process

Step 2:

Process Flow Application



Submits Process Steps / MSDS etc.



Approves / Modifies / Updates



- Users submit their process flow applications. The include MSDS risk assessments.
- Instructors review the application and provide feedback.
- Modifications of tools might be also initiated.

Booking Tool of the CRR

clustermarket

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My Reviews

MY ACCOUNTS

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Cleanroom

Lab Dashboard

Equipment

Users

Projects

Announcements

Reports

Integrations

Reviews

Refer a Lab

Search for external equipment & services.

23 - 29 Jan 2023

My Lab Activities

Lab Activities

Calendar

Equipment

Nanoimprint Lithography

Physical Vapour Deposition

Raith Voyager

Reactive Ion Etcher

Silane Oven

SUSS Maskaligner

UV-O Cleaner

FIB Room - Groundfloor Chyn

Focused Ion Beam

Yellow Light

Hood 1

Hood 2

Wet Bench 4

clustermarket

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Search for external equipment & services.

Equipment Overview

Name	Room	Manuf	Users
☐ Focused Ion Beam	FIB Room - Groundfloor Chyn	Carl Zeiss	
☐ Hood 1	Yellow Light	null	
☐ Hood 2	Yellow Light	null	
☐ Nanoimprint Lithography	EVG		
☐ Physical Vapour Deposition System	CREAVA		
☐ Raith Voyager	Raith		
☐ Reactive Ion Etcher	Sentech		
☐ Silane Oven	Thermo Fisher Scientific	VacuTherm 10664142	
☐ SUSS Maskaligner	SUSS MicroTec	MIB4	
☐ UV-O Cleaner	Jelight Company Inc.	144AX	
☐ Wetbench 1	Yellow Light	null	null
☐ Wetbench 2	Yellow Light	null	null
☐ Wetbench 3	Yellow Light	null	null
☐ Wet Bench 4	Yellow Light	null	null

Search for external equipment & services.

Users

Users overview

Name	Role	Individual Rules	Access groups	Status	Actions
☐ Arti Dangwal Pandey	Researcher	No	General	Active	
☐ Arti Dangwal Pandey	Instructor	Not required	Not required	Active	
☐ Carina Hedrich	Guest	No	General	Active	
☐ Carsten Putzke	Admin	Not required	Not required	Active	
☐ Chithra Hanhara Sharma	Guest	No	General	Active	
☐ Franziska Esmek	Guest	No	General	Active	
☐ Hessam Hossainkazemi	Guest	No	General	Active	
☐ Irene Fernandez-Cuesta	Instructor	Not required	Not required	Active	
☐ Jeremy Teuber	Guest	No	General	Active	
☐ Lewis Olaniji Akinsinde	Admin	Not required	Not required	Active	
☐ Malte Siegmund	Guest	No	General	Active	
☐ Meike Gurus Akcaalan	Guest	No	General	Active	

Manages Time

Manages Equipment

Manages Users

This tool manages costs and usage as well

Booking Details

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Request lab invite

Accept invitation

Request equipment access

Create a booking

Show all recurring bookings

No

Yes

Filter by status

ALL

EXTERNAL

INTERNAL

Equipment	User	Type	Start Date	End Date	Income	Frequency	Status	
Wetbench 3	Lewis Olaniyi Akinsinde	Other	13/02/2023 11:15	14/02/2023 11:30	0 GBP	Single	Completed	
Wetbench 2	Lewis Olaniyi Akinsinde	Other	13/02/2023 11:15	14/02/2023 11:30	0 GBP	Single	Completed	
Wetbench 1	Lewis Olaniyi Akinsinde	Other	13/02/2023 11:15	14/02/2023 11:15	0 GBP	Single	Completed	
Wetbench 1	Lewis Olaniyi Akinsinde	Other	13/02/2023 11:15	14/02/2023 11:15	0 GBP	Single	Completed	
Wetbench 2	Arti Dangwal Pandey	Use	17/02/2023 11:45	17/02/2023 12:00	0 GBP	Single	Booked	
Reactive Ion Etcher	Arti Dangwal Pandey	Use	17/02/2023 13:30	17/02/2023 13:45	0 GBP	Single	Booked	
Reactive Ion Etcher	Arti Dangwal Pandey	Use	17/02/2023 15:00	17/02/2023 16:00	0 GBP	Single	Cancelled	
Wetbench 3	Irene Fernandez-Cuesta	Use	15/02/2023 11:30	15/02/2023 12:30	0 GBP	Single	Completed	
Hood 1	Irene Fernandez-Cuesta	Use	15/02/2023 11:00	15/02/2023 12:00	0 GBP	Single	Completed	
Wet Bench 4	Irene Fernandez-Cuesta	Use	15/02/2023 11:00	15/02/2023 12:00	0 GBP	Single	Completed	
Wet Bench 4	Irene Fernandez-Cuesta	Use	14/02/2023 17:45	14/02/2023 18:30	0 GBP	Single	Completed	
SUSS Maskaligner	Irene Fernandez-Cuesta	Use	14/02/2023 17:00	14/02/2023 17:45	0 GBP	Single	Completed	
Wet Bench 4	Irene Fernandez-Cuesta	Use	14/02/2023 17:00	14/02/2023 17:30	0 GBP	Single	Completed	
Wet Bench 4	Irene Fernandez-Cuesta	Use	03/02/2023 10:30	03/02/2023 11:30	0 GBP	Single	Completed	
Wet Bench 4	Irene Fernandez-Cuesta	Use	02/02/2023 12:30	02/02/2023 13:30	0 GBP	Single	Completed	

Michael Rübhausen

Lab Admin

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Summary

- We are in the middle of a relaunch of the clean room
- Final operational status and costs of access are pending on the collaboration contracts UHH, MPG, and DESY can reach
- We should do everything to secure the operation of this high-end research infrastructure
- Access to it should be as easy as possible (provided that SOP's and Safety can be guaranteed)
- At the moment it is a “Geräteplattform” of the MIN @ UHH – we should make it a common research infrastructure of the Campus Bahrenfeld.