



# Nordic Nanolab User Meeting 2022

Myfab Chalmers, Gothenburg, Sweden, 5 - 6 May 2022

## Program: Thursday 5 May

10.00	Lab tours at the Nano fabrication laboratory, Myfab Chalmers (10.00 – 12.00)			
10.30	Registration and coffee			
11.30	Lunch			
12.20	Welcome address (RunAn),			
12.30	Invited talk: <i>Quantum Computers</i> , Jonas Bylander, Chalmers, WACQT			
<b>Thematic tutorials</b>		<b>Rooms</b>		
The thematic tutorials consist of 40-minutes presentations + time for questions and discussion. The presentations aim to educate in techniques and tools with a practical approach.		Characterization: Valdemar Thin Film technologies: Scania Etching technologies: RunAn Lithography: Plamstedtsalen		
13.30	<b>Characterisation</b> <b>C1: How to achieve high resolution SEM images</b> (basic), Presenter: Jonas Michael-Lindhard, DTU	<b>Thin Film technologies</b> <b>T1: A comparison of thin film deposition techniques</b> Presenter: Kristin Bergum UiO	<b>Etching technologies</b> <b>E1: Vacuum technology</b> (basic) Presenter: Mats Hagberg, Myfab Chalmers	<b>Lithography</b> <b>L1a: Photolithography: Understanding sample preparation and process variables for successful patterning</b> , Sarah McKibbin, LTH <b>L1b: Photolithographic post processing effects</b> , Jens Hemmingsen, DTU
14.20	Coffee break			
14.50	<b>Characterisation</b> <b>C2: How to probe nanoscale electronic properties? A revealing guide</b> Presenters: Jan Schultheiss and Jiali He, NTNU	<b>Thin Film technologies</b> <b>T2: Atomic layer deposition (ALD)</b> Presenter: Riikka Puurunen, Aalto University	<b>Etching technologies</b> <b>E2: Reactive Ion Etching fundamentals</b> (basic) Presenter: Berit Geilman Herstrøm, DTU	<b>Lithography</b> <b>L2 a: Electron beam lithography</b> Presenter: Niclas Lindvall, Myfab Chalmers <b>L2 b: EBL pattern design for randomly placed nanostructures</b> , Presenter: Claes Thelander, LTH
15.40	Poster session	Lab tours at the Nano fabrication laboratory, Myfab Chalmers (16.00 – 18.00)		
18.00	Hotel check-in (approximative time)			
19.00	Conference dinner at Universeum (reception at the Ocean zone, in front of the aquarium)			

## Program: Friday 6 May

09.00	Invited talk (RunAn): <i>Superconducting pilot line at VTT, Majumdar Himadri, VTT RunAn</i>			
10.00	<p><b>Characterisation</b></p> <p><b>C3:</b> Workshop session 1: <i>HyperSpy: Reproducible and open source data analysis of Electron Microscopy data using Jupyter Notebooks</i></p> <p>An interactive workshop with Magnus Nord, NTNU</p>	<p><b>Thin Film technologies</b></p> <p><b>T3:</b> <i>High-power impulse magnetron sputtering (HiPIMS). A case study for the Cu process</i></p> <p>Presenter: Evgeniy Shkondin DTU</p>	<p><b>Etching technologies</b></p> <p><b>E3:</b> <i>Accurate Nanoscale Plasma Etching</i> (Advanced)</p> <p>Presenter: Henri Jansen DTU</p>	<p><b>Lithography</b></p> <p><b>L3 a:</b> <i>Good practice in design layout</i></p> <p>Presenter: Thomas Pedersen, DTU Nanolab</p> <p><b>L3 b:</b> <i>Multi-layer lithography across tools</i></p> <p>Presenter: Jens Høvik, NTNU</p>
10.50	Coffee break			
11.20	<p><b>Characterisation</b></p> <p><b>C4:</b> Workshop session 2: <i>HyperSpy: Reproducible and open source data analysis of Electron Microscopy data using Jupyter Notebooks</i></p> <p>An interactive workshop with Magnus Nord, NTNU</p>	<p><b>Thin Film technologies</b></p> <p><b>T4:</b> <i>Reactive magnetron sputtering including reactive HiPIMS</i></p> <p>Presenter: Tomas Kubart, Myfab Uppsala</p>	<p><b>Etching technologies</b></p> <p><b>E4:</b> <i>Deep-Si etching</i></p> <p>Presenter: Anand Summanwar, SINTEF</p>	<p><b>Lithography</b></p> <p><b>L4:</b> <i>2PP lithography</i></p> <p>Presenter: Milena De Albuquerque Moreira, Myfab Uppsala</p>
12.10	Lunch			
13.10	<p><b>Characterisation</b></p> <p><b>C5:</b> "Photoemission techniques"; standard XPS/UPS, angle resolved photoemission spectroscopy (ARPES) for band structure measurements, and photoemission microscopy (PEEM) for laterally resolving chemistry on the surface"</p> <p>Presenter: Simon Cooil, UiO</p>	<p><b>Thin Film technologies</b></p> <p><b>T5:</b> <i>Pulsed laser deposition (PLD) and combinatorial PLD</i></p> <p>Presenter: Holger von Wenckstern, UiO</p>	<p><b>Etching technologies</b></p> <p><b>E5:</b> <i>Combining ALD thin films and vapor etching for fabricating unprecedented nanoscale free standing shell membranes</i></p> <p>Presenter: Stephanie Burgmann, NTNU</p>	<p><b>Lithography</b></p> <p><b>L5 a:</b> <i>Dry film photoresist: benefits and challenges compared to spin-coated SU8</i></p> <p>Presenter: Sadia Farjana, Chalmers</p> <p><b>L5 b:</b> <i>Edges covered by spray coating for metal electrode definition</i></p> <p>Presenter: Rune K. Christiansen, DTU Nanolab</p>
14.00	Coffee break			
14.20	Invited talk (RunAn): <i>Nanophotonics, Søren Stobbe, DTU</i>			
15.10	Poster prize			
15.15	Wrap-up			

Lecture rooms for tutorials:

Characterization (Valdemar), Thin Film technologies (Scania), Etching technologies (RunAn), Lithography (Palmstedtsalen)

QUESTIONS AND CONTACT:

Thomas Swahn, [thomas.swahn@chalmers.se](mailto:thomas.swahn@chalmers.se) Cristina Andersson, [cristina.andersson@chalmers.se](mailto:cristina.andersson@chalmers.se) Peter Modh, [peter.modh@chalmers.se](mailto:peter.modh@chalmers.se)

