

# NANOCENTER ACCOUNT SETUP

Welcome to the Maryland NanoCenter! We look forward to working with you in the very near future. In order to get started using the facilities, please complete the following steps:

## STEP 1: NEW USER REGISTRATION

If you have not yet done so, please register on our website at:

<http://www.nanocenter.umd.edu/register.php>

You will still need to be trained and authorized by our staff on each tool/lab you wish to use.

## STEP 2: BILLING ACCOUNT SETUP

Fill out and submit the appropriate account setup form:

[UMCP Users](#)

[External Users](#)

You will be charged an hourly rate only for time spent on equipment. Please note that you are not charged for time spent in a lab nor is there a monthly fee required.

Our [current rates](#) are shown below. You will be billed monthly for any NanoCenter charges. External users must provide either a purchase order or a valid credit card before working in the NanoCenter.

1. Purchase Orders
2. Credit Cards
  - 2.1. Credit card payment links are emailed to the email address(es) on file for each payment account. Simply enter the invoice number and your credit card information to make the payment.
  - 2.2. External users may refer to [this page](https://finance.umd.edu/externalar) (<https://finance.umd.edu/externalar>) for the appropriate payment option.
  - 2.3. Please contact Alice Mobaidin ([301-405-6047](tel:301-405-6047), [mobaidin@umd.edu](mailto:mobaidin@umd.edu)) if you have any questions.

## STEP 3: LAB AND EQUIPMENT TRAINING

The final step involves becoming familiar with the safety and operating procedures within each lab as well as becoming trained and authorized to use each tool you will be reserving. Contact the staff members of each NanoCenter lab to arrange training times. Please read the lab user requirements sections (below) for the lab you wish to use.

## FABLAB USER REQUIREMENTS

Welcome to FabLab! As part of the Maryland NanoCenter, we look forward to working with you to develop processes for a wide variety of exciting new materials and devices.

Please read over and complete the following requirements prior to working in the FabLab. Bring all three pages of the FabLab User Requirements for the orientation.

## FABLAB NEW USER ORIENTATION CHECK LIST

- UMCP users must complete the online training and successfully pass a quiz at the end.

1) "Chemical Hygiene Training Program for Chemical Workers"

Initials: \_\_\_\_\_ Date: \_\_\_\_\_

2) "Laboratory Exposure Controls"

Initials: \_\_\_\_\_ Date: \_\_\_\_\_

- UMCP users must complete the one-time classroom training  
"New Laboratory Researcher" or "New Laboratory Researcher for Undergraduates"

Initials: \_\_\_\_\_ Date: \_\_\_\_\_

These programs are located at the UMCP Department of Environmental Safety web site, <https://essr.umd.edu/research-safety/laboratory-safety/chemical-safety>.

**Outside users must have completed similar training and be approved on a case-by-case basis by FabLab staff.**

- All users must read and understand the following documents. They can be found at:

<http://www.nanocenter.umd.edu/fablab/documents>

○ Chemical Handling Procedures Initial: \_\_\_\_\_ Date: \_\_\_\_\_

○ Clean Room Protocols Initial: \_\_\_\_\_ Date: \_\_\_\_\_

- All new users must complete a one hour in-lab (no charge) orientation with one of the FabLab staff. Please contact Tom, Jon H., John A. or Mark for this. The orientation will cover:
  1. FabLab Rules and Regulations
    - a. Buddy System
    - b. After Hours Access
    - c. MSDS Sheets –what they are and where to find them
    - d. Procedure for Introducing New Materials and Chemicals
    - e. Cleanliness in FabLab
  2. Gowning Instruction
  3. Chemical Handling and Wet Bench Protocols
  4. Alarms/Response and Evacuation Procedures
  5. Disposal of Waste Solvents
  6. Reserving Tools/Tool Training – **You must reserve tools before using them!**

## FABLAB USER REQUIREMENTS

## FABLAB STAFF CONTACT LIST

John Abrahams	(301) 405-6664	<a href="mailto:jabrah@umd.edu">jabrah@umd.edu</a>
Tom Loughran	(301) 405-3642	<a href="mailto:tcl@umd.edu">tcl@umd.edu</a>
Jon Hummel	(301) 405-5017	<a href="mailto:jhummel1@umd.edu">jhummel1@umd.edu</a>
Mark Lecates	(301) 405 5197	<a href="mailto:mlecatess@umd.edu">mlecatess@umd.edu</a>

I have read and understood the documents listed above and have completed in-lab training with a FabLab staff member.

Name (Print): \_\_\_\_\_ Date: \_\_\_\_\_

Signature: \_\_\_\_\_

Staff Signature: \_\_\_\_\_

## AIM LAB USER REQUIREMENTS

Welcome to the AIM Lab! As part of the Maryland NanoCenter, we look forward to working with you on imaging and characterizing your samples that are pushing the boundaries of science and technology.

Please read over and complete the following requirements prior to working in the AIM Lab. Please sign this form and return it to the AIM Lab staff.

## AIM LAB NEW USER ORIENTATION CHECK LIST

- All new users must schedule a no-charge AIM Lab familiarization and safety training session with Wen-An Chiou or Sz-Chian. At that time, they will give you a brief overview of the equipment in the AIM Lab and discuss with you what you would like to do.
- Each tool in the AIM Lab requires user training and passing a test in order to reserve time and use the tool on your own. Please arrange with the staff for training and testing.

## AIM LAB STAFF CONTACT INFORMATION

Wen-An Chiou	(301) 405-0541	<a href="mailto:wachiou@umd.edu">wachiou@umd.edu</a>
Phil Piccoli	(301) 405-6966	<a href="mailto:piccoli@umd.edu">piccoli@umd.edu</a>
Sz-Chian Liou	(301) 405-0051	<a href="mailto:scliou@umd.edu">scliou@umd.edu</a>
Jiancun Rao	(301) 405-0561	<a href="mailto:jcrao@umd.edu">jcrao@umd.edu</a>

I have read and understood the documents listed above and have completed in-lab training with an AIM Lab staff member.

Name (Print): \_\_\_\_\_ Date: \_\_\_\_\_

Signature: \_\_\_\_\_

Staff Signature: \_\_\_\_\_

## NANOCENTER EQUIPMENT RATES (\$/HR.)

	UMCP	External / Nonprofit	Small Commercial/ MTECH	Large Commercial
<b>FabLab</b>				
<b>Process Tools</b>	75	116	158	220
<b>E-Beam Litho - Raith</b>	43	66	98	165
<b>(1)</b>	(21.50)	(33)	(49)	(82.50)
<b>Hitachi SEM</b>	25	39	60	121
<b>ASAP 2020</b>	18	28	49	67
<b>Porosimeter (2)</b>	(5)	(7)	(14)	(18)
<b>Backside Tools:</b>				
<b>Wafer Probe Station, Dicing Saw, Glove Box</b>	26	40	61	136
<b>H-J-Y Raman</b>	34	52.50	78	150
<b>Staff Technical Assistance Time</b>	37	57	63	72

(1) Rate is for Raith eLine system runs of 6 hours or less. For runs longer than six hours, the first six hours will be charged at the published rate and any hours over six hours will be charged at 50% of the regular rate.

(2) Rate is for first 4 hours with each additional hour in (\$).

	UMCP	External / Nonprofit	Small Commercial/ MTECH	Large Commercial
<b>AIMLab</b>				
<b>Hitachi SU-70 FEG SEM</b>	48	74	126	165
<b>JEOL 2100 LaB6 TEM</b>	43	66	126	165
<b>JEOL 2100 FEG TEM/STEM</b>	61	94	189	248
<b>JEOL 8900R Microprobe</b>	32	49	126	165
<b>Tescan GAIA/XEIA FEG SEM</b>	48	74	126	165
<b>Tescan GAIA/XEIA FIB/SEM</b>	95	147	189	248
<b>Staff Technical Assistance Time</b>	37	57	63	72
<b>Heating Holder</b>	32	49	79	110
<b>Cryo Holder/Plunger</b>	26	40	52	73

	UMCP	External / Nonprofit	Small Commercial/ MTECH	Large Commercial
<b>Chemistry SAC Lab</b>				
<b>H-J-Y Raman</b>	34	52.50	78	150
<b>AFM</b>	32	49	90	101