NanoCenter Account Setup Form

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, you need to 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 at 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. After you receive your monthly invoice, please contact Ms. Regina Achey at the University of Maryland Bursar’s Office (301-405-9027) to pay by credit card.

   2.2. Give us the credit card information and we will charge the card and email you (or whomever needs the information) with details of the charge.
2.3. Prepay via credit card. We will send monthly statements showing charges applied to the prepaid amount and the remaining balance.

2.4. Please contact Alice Mobaidin (301-405-6047, mobaidin@umd.edu) to elect options 2 or 3 and if you have any questions about your bill.

Alice Mobaidin
The Maryland NanoCenter
University of Maryland
1119 Jeong H. Kim Engineering Building
8228 Paint Branch Drive
College Park, Maryland 20742
Phone: (301) 405-6047
Email: mobaidin@umd.edu

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
  1) “New Laboratory Researcher” or “New Laboratory Researcher for Undergraduates”
     
     Initials: _______________ Date: ____________

These program are located on the UMCP Department of Environmental Safety web site, [https://essr.umd.edu/research-safety/laboratory-safety/chemical-safety](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](http://www.nanocenter.umd.edu/fablab/documents)
  
  o Chemical Handling Procedures Initial: _______ Date: ____________
  
  o 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   jabrah@umd.edu
Tom Loughran    (301) 405-3642   tcl@umd.edu
Jon Hummel      (301) 405-5017   jhummel1@umd.edu
Mark Lecates    (301) 405 5197   mlecates@umd.edu

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  wachiou@umd.edu
Phil Piccoli      (301) 405-6966  piccoli@umd.edu
Sz-Chian Liou     (301) 405-0051  scliou@umd.edu
Jiancun Rao       (301) 405-0561  jcroa@umd.edu

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 Account Setup Form
# NanoCenter Equipment Rates ($/Hr.)

<table>
<thead>
<tr>
<th>FabLab</th>
<th>UMCP</th>
<th>External / Nonprofit</th>
<th>Small Commercial / MTECH</th>
<th>Large Commercial</th>
</tr>
</thead>
<tbody>
<tr>
<td>Process Tools</td>
<td>75</td>
<td>116</td>
<td>158</td>
<td>220</td>
</tr>
<tr>
<td>E-Beam Litho - Raith (1)</td>
<td>43</td>
<td>66</td>
<td>98</td>
<td>165</td>
</tr>
<tr>
<td></td>
<td>(21.50)</td>
<td>(33)</td>
<td>(49)</td>
<td>(82.50)</td>
</tr>
<tr>
<td>Hitachi SEM</td>
<td>25</td>
<td>39</td>
<td>60</td>
<td>121</td>
</tr>
<tr>
<td>ASAP 2020 Porosimeter (2)</td>
<td>18</td>
<td>28</td>
<td>49</td>
<td>67</td>
</tr>
<tr>
<td>Backside Tools:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wafer Probe Station, Dicing Saw,</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Glove Box</td>
<td>26</td>
<td>40</td>
<td>61</td>
<td>136</td>
</tr>
<tr>
<td>H-J-Y Raman</td>
<td>34</td>
<td>52.50</td>
<td>78</td>
<td>150</td>
</tr>
</tbody>
</table>

(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 ($).
### AIMLab

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

### Chemistry SAC Lab

<table>
<thead>
<tr>
<th>Equipment</th>
<th>UMCP</th>
<th>External / Nonprofit</th>
<th>Small Commercial/ MTECH</th>
<th>Large Commercial</th>
</tr>
</thead>
<tbody>
<tr>
<td>H-J-Y Raman</td>
<td>34</td>
<td>52.50</td>
<td>78</td>
<td>150</td>
</tr>
<tr>
<td>AFM</td>
<td>32</td>
<td>49</td>
<td>90</td>
<td>101</td>
</tr>
</tbody>
</table>