# Usage Rates & Fees

<table>
<thead>
<tr>
<th>Minimum Time (hours)</th>
<th>Rate</th>
<th>Monthly Cap</th>
<th>Rate</th>
<th>Commercial Monthly Cap</th>
<th>Sponsor Monthly Cap</th>
</tr>
</thead>
<tbody>
<tr>
<td>User One-time Fee</td>
<td>$500</td>
<td>$750</td>
<td></td>
<td></td>
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<tr>
<td>Clean Room Usage INRF and Bion Access (Hourly Fee)</td>
<td>38 hr</td>
<td>$1,276</td>
<td>110 hr</td>
<td>$4,600</td>
<td>$3,000</td>
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<tr>
<td>Clean Room Usage INRF Access Only (Hourly Fee)</td>
<td>38 hr</td>
<td>$950</td>
<td>110 hr</td>
<td>$2,850</td>
<td>$2,138</td>
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<tr>
<td>Staff time</td>
<td>$125</td>
<td>$225</td>
<td></td>
<td></td>
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<tr>
<td>Key Fee (One-time)</td>
<td>$10</td>
<td>$10</td>
<td></td>
<td></td>
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<tr>
<td>Hazardous waste disposal/liter (cost varies)</td>
<td></td>
<td></td>
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</tbody>
</table>

## Equipment Rates

### Disposals Tools
- CHA Mark 50 Evaporation (superuser tool): 1.50 $25/hr $50/hr
- E-Beam 1 evaporation (Temescal CV-8): 3.00 $15/hr $25/hr
- E-Beam 2 evaporation (Temescal CD-14) (superuser tool): 3.00 $15/hr $25/hr
- CHA Thermal evaporation (IEC-600-RAP): 3.00 $20/hr $30/hr
- PE 4400 Sputtering (superuser tool): 3.00 $15/hr $25/hr
- PE 2400-A Sputtering (superuser tool): 3.00 $15/hr $25/hr
- PE 2400-B Sputtering (superuser tool): 3.00 $15/hr $25/hr
- Electric Plating: No charge No charge
- ALD Atomic Layer Deposition (Cambridge): No Min $15/hr $25/hr
- Applied MST MVD 100: 0.50 $20/hr $30/hr

### Lithography Tools
- Canon i4 4000 Stepper (superuser tool): 0.25 $150/hr $160/hr
- Karl Suss MA6 Mask Aligner: 0.50 $30/hr $40/hr
- Karl Suss MJB-3 Mask Aligner: 0.50 $20/hr $30/hr
- Karl Suss Mask Aligner model 3001: 0.50 $20/hr $30/hr
- Quintil Mask Aligner: 0.50 $20/hr $30/hr
- UC Field exposure system: 0.50 $15/hr $25/hr
- Spinners: No Min $10/hr $20/hr

### Dry Etching
- STS System DRIE: 0.50 $40/hr $50/hr
- New SPTS DRIE: 0.50 $40/hr $50/hr
- Plasma-Therm RIE Model 780: 0.50 $35/hr $45/hr
- Triton ICPRIE: 0.50 $25/hr $35/hr
- Met2 Pulsing Etcher: 0.50 $25/hr $35/hr
- Plasma Technology Model 800MP RIE: 0.50 $35/hr $45/hr
- Plasma Technology Model DP800-UP: 0.50 $30/hr $40/hr
- Laser Ablation Tool Raemetronics RapidX250: 0.50 $45/hr $55/hr

### Plasma-Asher
- Gasconics Downstream Plasma Ashing: 0.25 $20/hr $30/hr
- Technique I 500: 0.25 $15/hr $25/hr
- Plasma line ash: 0.25 $15/hr $25/hr
- Anatech LTD Plasma SP100: 0.25 $15/hr $25/hr

### Hot Embossing
- Nano Imprinter Janoptik Hex03: 0.50 $40/hr $50/hr

### CVD System
- Plasma-Therm PECVD Model 780: 1.00 $20/hr $30/hr
- BMR Low Temp PECVD (superuser tool): 0.50 $20/hr $30/hr
- Ancon LTO CVD: 3.00 $20/hr $30/hr
- ASM LPCVD low-stress nitride, poly (superuser tool): 1.00 No Charge No Charge
- First Nano Furnace (Easy Tube 3000): No Min $40/hr $50/hr

### Diffusion Furnaces
- 6 inch Dry and Wet Oxidation Tube (superuser tool): 1.00 $10/hr $20/hr
- 4 inch Dry Oxidation Tube: 1.00 $15/hr $20/hr
- 4 inch hot anneal Tube: 1.00 $15/hr $20/hr
- 4 inch sintering Tube: 0.80 $10/hr $20/hr
- 4 inch Boron Tube (superuser tool): 1.00 $15/hr $25/hr
- 2 inch Nano furnace Tube (superuser tool): 1.00 $15/hr $20/hr
- 4 inch mini-brute thermal bonding Tube: 1.00 $16/hr $20/hr
- 4 inch mini-brute Tube: 1.00 $10/hr $20/hr
- Heatpulse 610 RTA: 1.00 $20/hr $30/hr
- Avodic Bonding Furnace up to 4 inch (superuser tool): 1.00 $5/hr $15/hr

### Characterization
- SEM Hecht 4700 / EDAX: 0.60 $50/hr $60/hr
- Hitachi S-3000N, Field Emission SEM / profilometer (superuser tool): 0.50 $20/hr $30/hr
- Dektak: No Min $15/hr $25/hr
- Tensor FLX/220A Stress measurement tool: No Min No Charge No Charge
- Nanospec AFT / Nanometrics 200: No Min No Charge No Charge
- Granther ellipsometer (superuser tool): No Min No Charge No Charge
- Toussius 8130 CDU (superuser tool): 1.00 $25/hr $35/hr

### Back-End Processing Tools
- K&S TURBO Dicing Saw (superuser tool): 0.50 $20/hr $30/hr
- K&S Wedge Bonder: 0.50 $20/hr $30/hr
- Hotflip Ball Bonder: 0.50 $20/hr $30/hr
- Cincinnati sub-Zero Environmental chamber: 1.00 $16/hr $20/hr
- APL Intensity Environmental chamber: 1.00 $10/hr $20/hr
- Inert Environment Blue M Oven 600 Degree: 1.00 $5/hr $15/hr
- HDMS Oven: 1.00 $5/hr $15/hr

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1 The Cleanroom Usage Monthly Cap is applied per user. The Equipment Monthly Cap is applied per tool usage for each user, service requests and staff training are not included.
2 The Sponsor Cap Rate applies to Government or Academic Sponsored projects.