## USAGE RATES & FEES

### Minimum Time (hours) Rates

<table>
<thead>
<tr>
<th>Service</th>
<th>Rate</th>
<th>Monthly Cap</th>
<th>Commercial Monthly Cap</th>
<th>Sponsor Monthly Cap</th>
<th>Academic Monthly Cap</th>
</tr>
</thead>
<tbody>
<tr>
<td>User One-time Fee</td>
<td>$500</td>
<td>$750</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clean Room Usage INRF and Bion Access (Hourly Fee)</td>
<td>42 hr</td>
<td>$1,520</td>
<td>110 hr</td>
<td>$4,400</td>
<td>$3,900</td>
</tr>
<tr>
<td>Clean Room Usage INRF Access Only (Hourly Fee)</td>
<td>42 hr</td>
<td>$1,216</td>
<td>110 hr</td>
<td>$3,648</td>
<td>$2,736</td>
</tr>
<tr>
<td>Clean Room Usage Bion Only (Hourly Fee)</td>
<td>42 hr</td>
<td>$950</td>
<td>110 hr</td>
<td>$2,850</td>
<td>$2,138</td>
</tr>
<tr>
<td>Staff Fee</td>
<td>$138</td>
<td>$225</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Key Fee (One-time)</td>
<td>$10</td>
<td>$10</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hazardous waste disposal/liter (cost varies)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### EQUIPMENT RATES

**Nanolithography Tools**
- CHA Mark 50 Evaporation (supervisor tool) 1.50 $25 hr $50 hr
- E-Beam 1 evaporation (Temescal CV-8) 3.00 $17 hr $25 hr
- E-Beam 2 evaporation (Temascal CV-14) (supervisor tool) 3.00 $15 hr $25 hr
- E-Beam Thermal evaporation (SEC-600-RAP) 3.00 $22 hr $30 hr
- PE 4400 Sputtering (supervisor tool) 3.00 $15 hr $25 hr
- PE 2400-A Sputtering (supervisor tool) 3.00 $15 hr $25 hr
- PE 2400-B Sputtering (supervisor tool) 3.00 $15 hr $25 hr
- Denton Sputter 1.00 $17 hr $25 hr
- Electric Plating (no charge) no charge
- ALD Atomic Layer Deposition (Cambridge) No Min $17 hr $25 hr

**Clean Room Usage INRF Access Only (Hourly Fee)**
- 42 hr $1,520
- 110 hr $4,400

**Clean Room Usage Bion Only (Hourly Fee)**
- 42 hr $1,216
- 110 hr $3,648

**Clean Room Usage BiON Only (Hourly Fee)**
- 42 hr $950
- 110 hr $2,850

**Clean Room Usage INRF and Bion Access (Hourly Fee)**
- 42 hr $1,520
- 110 hr $4,400

**Internal (UC Users)**

**External Users**

### Staff time
- $138
- $225

### Key Fee (One-time)
- $10
- $10

### Hazardous waste disposal/liter (cost varies)

### EQUIPMENT RATES

**Deposition Tools**
- CHA Mark 50 Evaporation (supervisor tool) 1.50 $25 hr $50 hr
- E-Beam 1 evaporation (Temascal CV-8) 3.00 $17 hr $25 hr
- E-Beam 2 evaporation (Temascal CV-14) (supervisor tool) 3.00 $15 hr $25 hr
- E-Beam Thermal evaporation (SEC-600-RAP) 3.00 $22 hr $30 hr
- PE 4400 Sputtering (supervisor tool) 3.00 $15 hr $25 hr
- PE 2400-A Sputtering (supervisor tool) 3.00 $15 hr $25 hr
- PE 2400-B Sputtering (supervisor tool) 3.00 $15 hr $25 hr
- Denton Sputter 1.00 $17 hr $25 hr
- Electric Plating (no charge) no charge
- ALD Atomic Layer Deposition (Cambridge) No Min $17 hr $25 hr

**Lithography Tools**
- Canon i4 4000 Stepper (supervisor tool) 0.25 $150 hr $160 hr
- Karl Suss MA6 Mask Aligner 0.50 $33 hr $40 hr
- Karl Suss MA56 Mask Aligner 0.50 $33 hr $40 hr
- Karl Suss MJB-3 Mask Aligner 0.50 $20 hr $30 hr
- Kasper Mask Aligner model 3001 0.50 $20 hr $30 hr
- Quintel Mask Aligner 0.50 $20 hr $30 hr
- AB&M UV flood exposure system 0.25 $17 hr $25 hr

**Dry Etching**
- STS System DRIE 0.50 $44 hr $50 hr
- New EPTR DRIE 0.50 $44 hr $50 hr
- Plasma-Therm RIE Model 760 0.50 $38 hr $45 hr
- Trion ICPFRIE 0.50 $38 hr $45 hr
- Ion Milling 3.00 $15 hr $25 hr
- APF Pulling fixture 0.50 $15 hr $25 hr
- Plasma Technology Model BV/AIC-700 0.50 $35 hr $45 hr
- Plasma Technology Model PV-400 CIP 0.50 $30 hr $40 hr
- Laser Ablation Tool (argon or other gas) No Charge No Charge
- ALD Atomic Layer Deposition (Cambridge) No Min $17 hr $25 hr

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

**Diffusion Furnaces**
- 7 inch Dry and Wet Oxidation Tube (supervisor tool) 1.00 $11 hr $20 hr
- 7 inch Oxidation Tube 1.00 $11 hr $20 hr
- 4 inch annealing Tube 1.00 $11 hr $20 hr
- 4 inch Bimn Tube (supervisor tool) 1.00 $11 hr $20 hr
- 4 inch Nano furnace (supervisor tool) 1.00 $11 hr $20 hr
- 4 inch mini-brute thermal bonding Tube 1.00 $11 hr $20 hr
- 4 inch mini-brute Tube 1.00 $11 hr $20 hr
- Heatpulse 310 CVD (supervisor tool) 1.00 $25 hr $30 hr
- Anodic Bonding Furnace up to 4 inch (supervisor tool) 1.00 $15 hr $20 hr

**Characterization**
- SEM (Hitachi 4700 / EDAX) 0.50 $44 hr $50 hr
- R2000 Critical Dimension / Profiler (supervisor tool) 0.25 $44 hr $50 hr
- Dektak 10A (supervisor tool) No Min $17 hr $25 hr
- Surface PZT-2304 Stress measurement tool No Min $17 hr $25 hr
- Nanospec AF1 / Nanometrics 200 No Min No Charge No Charge
- Gaertner ellipsometer (supervisor tool) No Min No Charge No Charge
- Filmetrics F40-NSR Thin film analyzer 1.00 $25 hr $30 hr

**Back-End Processing Tools**
- Wuxing Saw (supervisor tool) 0.50 $22 hr $30 hr
- K&S Wedge Bonder 0.50 $20 hr $30 hr
- K&S Gold Ball Bonder 0.50 $20 hr $30 hr
- Hybrid Ball Bonder 0.50 $20 hr $30 hr
- Cincinnati Sub-Zero Environmental Chamber 1.00 $10 hr $20 hr
- Tenney Environmental chamber 1.00 $10 hr $20 hr
- Heat Environment Blue M Oven 600 Degree 1.00 $5 hr $15 hr

**Credits**

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.