CCMR Shared Facility Rates - Academic Use
(Effective March 1, 2020)

Some rates consist of a fixed charge plus an hourly rate or a minimum charge.
For academic users, use exceeding $10k in the calendar year will be charged at 60% of the normal instrument use fee.

<table>
<thead>
<tr>
<th>Academic Rate</th>
<th>Manager Labor Rate (may be charged in addition to instrument rates below for assisted use)</th>
</tr>
</thead>
<tbody>
<tr>
<td>$95.00 /hr</td>
<td>$95.00 /hr</td>
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</tbody>
</table>

**Electron Microscopy**

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Rate</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arctica-S/TEM</td>
<td>$30.00/hr</td>
<td>*temporary rate</td>
</tr>
<tr>
<td>Cryo-S/TEM</td>
<td>$60.00/hr</td>
<td>$45 after hours</td>
</tr>
<tr>
<td>FEI F20 TEM STEM</td>
<td>$60.00/hr</td>
<td>$45 after hours</td>
</tr>
<tr>
<td>FEI Strata 400 STEM FIB</td>
<td>$85.00/hr</td>
<td>$60 after hours</td>
</tr>
<tr>
<td>Thermo-Helios-G4-UX-FIB</td>
<td>$85.00/hr</td>
<td>$60 after hours</td>
</tr>
<tr>
<td>NION UltraSTEM 100</td>
<td>$60.00/hr</td>
<td>4 hour minimum</td>
</tr>
<tr>
<td>FEI Tecnai 12 BioTwin TEM</td>
<td>$65.00/hr</td>
<td></td>
</tr>
<tr>
<td>Zeiss Gemini 500 SEM</td>
<td>$65.00/hr</td>
<td></td>
</tr>
<tr>
<td>LEO 1550 FESEM (Keck SEM)</td>
<td>$65.00/hr</td>
<td></td>
</tr>
<tr>
<td>Tescan-Mira3-FESEM</td>
<td>$65.00/hr</td>
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</tbody>
</table>

**TEM Sample Preparation:**

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allied Multiprep Polishers</td>
<td>$26.00/hr</td>
</tr>
<tr>
<td>Allied TechCut5 Precision High Speed Saw</td>
<td>$44.00/hr</td>
</tr>
<tr>
<td>Leica EM UC7/FC7 Cryoultramicrotome</td>
<td>$44.00/hr</td>
</tr>
<tr>
<td>Leica Ultracut UCT Ultramicrotome - RT</td>
<td>$33.00/hr</td>
</tr>
</tbody>
</table>

**Microscopy, Spectroscopy, Surface Analysis**

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Rate</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scienta Omicron ESCA 2SR XPS System</td>
<td>$75.00/hr</td>
<td></td>
</tr>
<tr>
<td>Surface-Science-Instruments-SSX-100-XPS-System</td>
<td>$26.00/hr</td>
<td></td>
</tr>
<tr>
<td>Keyence VK-X260 3D Laser Scanning Confocal Microscope</td>
<td>$38.00/hr</td>
<td></td>
</tr>
<tr>
<td>Asylum-MFP3D-Bio-AFM-SPM</td>
<td>$38.00/hr</td>
<td></td>
</tr>
<tr>
<td>Tencor Alpha Step 500 Stylus Profilometer</td>
<td>$20.00/hr</td>
<td></td>
</tr>
<tr>
<td>WITec-Alpha300R-Confocal-Raman-Microscope</td>
<td>$41.00/hr</td>
<td>$32 after hours</td>
</tr>
<tr>
<td>Renishaw InVia Confocal Raman Microscope</td>
<td>$38.00/hr</td>
<td></td>
</tr>
<tr>
<td>3i-Marianias-Spinning-Disk-Confocal-Microscope</td>
<td>$20.00/hr</td>
<td></td>
</tr>
<tr>
<td>Bruker Hyperion FT-IR Spectrometer &amp; Microscope</td>
<td>$38.00/hr†</td>
<td></td>
</tr>
<tr>
<td>Bruker Vertex Vacuum FT-IR</td>
<td>$38.00/hr†</td>
<td></td>
</tr>
<tr>
<td>Cary 5000 UV Vis NIR Spectrometer</td>
<td>$31.00/hr†</td>
<td></td>
</tr>
<tr>
<td>Shimadzu UV-3600 UV-Vis-NIR Spectrometer</td>
<td>$31.00/hr†</td>
<td></td>
</tr>
<tr>
<td>Edinburgh FLS1000 Fluorescence and Lifetime Spectrometer</td>
<td>$31.00/hr†</td>
<td></td>
</tr>
<tr>
<td>Novocontrol Broadband Dielectric Spectrometer</td>
<td>$31.00/hr†</td>
<td></td>
</tr>
</tbody>
</table>
Novocontrol Thermal Stimulated Depolarization Current (TSDC) $31.00 /hr‡
‡ $10 minimum charge

**Soft Matter/Polymer Analysis**

- TA Instruments DHR3 Single Head Rheometer $31.50 /hr
- Waters MALDI Micro MX (MALDI-TOF) $50 + $132.00 /hr
- JAI-LC9110NEXT-Recycling-Preparative-GPC $50 + $54.00 /hr
- Waters Ambient-Temperature GPC $28.00 /hr
- Waters Ambient-Temperature Aqueous GPC $28.00 /hr
- Waters Breeze DMSO-GPC $28.00 /hr
- TA Instruments Q500 Thermogravimetric Analyzer (TGA) $28.00 /hr
- TA Instruments Q1000 Modulated Differential Scanning Calorimeter (MDSC)

**X-Ray and Diffraction Analysis**

- Rigaku SmartLab X-Ray Diffractometer $38.00 /hr
- Bruker D8 General Area Detector Diffraction System (GADDS) $7+ $42.00 /hr
- Bruker D8 Powder Diffractometer $42.00 /hr
- Multiwire Back-Reflection Laue Detector $63.00 /hr

**Mechanical Properties Testing and Analysis**

- TA Instruments DMA Q800 Dynamic Mechanical Thermal Analysis (DMTA) $15 + $35.00 /hr
- TA Instruments Q400EM Thermomechanical Analysis (TMA) $43.00 /hr
- Micro Hardness Tester $5 + $5.25 /hr
- Micromechanical Analyzer $27.00 /hr
- Linkham Microscope Tensile Stage $15.50 /hr
- ATM Sonic sifter $10.75 /hr

**Thin Film Deposition, and Material Processing**

- Varian Thermal Bell Jar Evaporator Clark Hall $70.00 /use
- Sputter Deposition $95.00 /use
- KJL Magnetron Sputtering Tool $80.00 /sample
- Neocera EX200 Pulsed Laser Deposition System $75 + $15.75 /hr
- KSV-NIMA-KN4010 Dip Coater $5 + $11.00 /hr
- KSV-NIMA-KN2002 Langmuir Blodgett Trough $10 + $11.00 /hr
- Laurell WS-400A Spin Coater $10 + $11.00 /hr
Heat Treating
Lindberg Vacuum Tube Furnace (Clark Hall)  $10 + $2.60 /hr
All controlled atmosphere tube furnaces, Bard Hall  $10 + $2.60 /hr
All other furnaces and ovens (Labtemp, Lindberg, Vulcan, Hotpack, National)  $6 + $2.60 /hr

Electronic & Magnetic Measurements
Quantum Design Physical Property Measurement Systems (PPMS)  $35 + $12.00 /hr
Lakeshore Tabletop Magnetic-Cryogenic Probe System  $13.00 /hr
Cascade CPS-06 Four Point Probe  $6 + $16.00 /hr

Sample Preparation, Cutting, Polishing, etc.
Sample Prep
Enerpac Hydraulic Press  $10.75 /hr
Buehler Simplemet II mounting press  $10 + $10.75 /hr
Inert Gas Glove Box  $22.00 /use
Fritsch-Planetary-Mill  $21.00 /use
Ball Mill  $5.50 /hr
Spex 8000 MIXER /MILL  $21.50 /hr
Garlock GEM-T Jet mill  $10.75 /hr
Cutting/Cleaning/Polishing
MicroMech Wafering Machine  $15 + $21.50 /hr
Allied TechCut5 Precision High Speed Saw  $44.00 /hr
Glass Bead Abrasive Unit (sand blasting)-Clark  $16.50 /hr
SS White Sand Blasting Unit  $10 + $16.50 /hr
Buehler SiC Grinding Papers-Bard  $27.00 /use
Struers Rotopol  $28.00 /hr
Branson Ultrasonic Bath (large)  $10 + $11.00 /hr
Welding/Bonding
WestBond-747630E Wire Bonder  $5 + $10.50 /hr
TPT HB05 Manual Wire Bonder  $5 + $10.50 /hr
Stationary Spot Welder Hughes HRW250B (Clark Hall)  $11.50 /borrowed use

Test Equipment Lending Library
(more info at http://www.ccmr.cornell.edu/instruments/test-equipment-library/)
8000 - Varian 979 Port Leak Detector  $6 + $2.02 /hr
8001-8002 - Portable RGA Pump Stations (Extorr or SRS)  $6 + $0.53 /hr
8011-8013 - Portable Turbo Pump Stations (Clark or Bard) $6 + $0.67/hr
8020-8024 - Rough Pumps (Clark Hall) $6 + $0.22/hr
9078 - Agilent 33521A Arbitrary Waveform Generator $6 + 0.05/hr
9171 - Agilent 4284A Precision LCR Meter $6 + 0.29/hr
9132 - Agilent 8565E Spectrum Analyzer $6 + 0.43/hr
9123 - Agilent 8722ES Network Analyzer $6 + 0.43/hr
9203 - Agilent B1500 Device Analyzer $6 + 0.43/hr
9040-9046 - Agilent E3630A Triple Output Power Supplies $6 + 0.01/hr
9201 - Agilent E4991A RF Impedance/Material Analyzer $6 + 0.43/hr
9081-9084 - Agilent E8257 PSG Analog Signal Generators $6 + 0.43/hr
9170 - Andeen Hagerling DCPAX/TP1 Capacitance/Loss Bridge $6 + 0.43/hr
9020-9022 - DL Instruments DL1121 Preamplifiers $6 + 0.07/hr
9047-9051 - Extech DC and BK Precision AC Power Supplies $6 + 0.01/hr
9152 - Extech IRC40 250C Thermal Imager $6 + 0.03/hr
9154-IRCON Modline 3 Infrared Thermometer-Bard $6 + 0.03/hr
9155-IRCON Modline Two Color Pyrometer-Bard $6 + 0.03/hr
9156-Luxtron Optical Fiber Temperature Control System-Bard $6 + 0.03/hr
9140-9144 - FW Bell Hall Probes $6 + 0.03/hr
9180-9183 - GPIB-to-USB Adaptors $6 + 0.01/hr
9072-9077 - HP 3325A Function Generators $6 + 0.03/hr
9130 - HP 85662A Spectrum Analyzer $6 + 0.05/hr
9085 - HP 8657B 2GHz Signal Generator $6 + 0.09/hr
9160 - Keithley 6430 Sub-femtoamp Source Meter $6 + 0.23/hr
9112 - LeCroy 8500A Wavemaster Oscilloscope $6 + 0.43/hr
9113 - LeCroy SDA11000 Oscilloscope $6 + 0.43/hr
9091-9092 - Picosecond 10070A Pulse Generators $6 + 0.31/hr
9093 - Picosecond 10300B Pulse Generators $6 + 0.43/hr
9024-9025 - Signal Recovery 5113 Preamplifiers $6 + 0.04/hr
9001-9009, 9017 - Signal Recovery 7265 Lock-in Amplifiers $6 + 0.09/hr
9026-9031 - Stanford Research SR560 Low Noise Amplifiers $6 + 0.05/hr
9000 - Stanford Research SR844 RF Lock-in $6 + 0.17/hr
9101-9104 - Tektronix TDS2024 Four Channel Digital Oscilloscopes $6 + 0.06/hr
9107-9109 - Tektronix TDS8000 Digital Sampling Oscilloscopes $6 + 0.42/hr
9060-9065 - Yokogawa 7651 DC Programmable Power Sources $6 + 0.07/hr