### CCMR Shared Facility Rates - Industry Use

(Updated 3/18)

Some rates consist of a fixed + hourly rate. Manager Labor Rate (may be charged in addition to instrument rates below) $154.00 /hr

#### Electron Microscopy

<table>
<thead>
<tr>
<th>Equipment Description</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cryo-S/TEM</td>
<td>n/a /hr</td>
</tr>
<tr>
<td>FEI F20 TEM STEM</td>
<td>$459.00 /hr</td>
</tr>
<tr>
<td>FEI Strata 400 STEM FIB</td>
<td>$306.00 /hr</td>
</tr>
<tr>
<td>NION UltraSTEM 100 (4 hr minimum)</td>
<td>$510.00 /hr</td>
</tr>
<tr>
<td>FEI Tecnai T12 Spirit TEM STEM</td>
<td>$224.50 /hr</td>
</tr>
<tr>
<td>FEI Tecnai 12 BioTwin TEM</td>
<td>$224.50 /hr</td>
</tr>
<tr>
<td>Zeiss Gemini 500 SEM</td>
<td>$224.50 /hr</td>
</tr>
<tr>
<td>LEO 1550 FESEM (Keck SEM)</td>
<td>$224.50 /hr</td>
</tr>
<tr>
<td>Tescan-Mira3-FESEM</td>
<td>$224.50 /hr</td>
</tr>
<tr>
<td>Air-SEM</td>
<td>$224.50 /hr</td>
</tr>
</tbody>
</table>

**TEM Sample Preparation:**

<table>
<thead>
<tr>
<th>Equipment Description</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allied Multiprep Polisher (A or B)</td>
<td>$112.20 /hr</td>
</tr>
<tr>
<td>Leica EM UC7/FC7 Cryoultramicrotome</td>
<td>$127.50 /hr</td>
</tr>
<tr>
<td>Leica Ultracut UCT Ultramicrotome - RT</td>
<td>$127.50 /hr</td>
</tr>
</tbody>
</table>

#### Microscopy, Spectroscopy, Surface Analysis

<table>
<thead>
<tr>
<th>Equipment Description</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scienta Omicron ESCA 2SR XPS System</td>
<td>$250.00 /hr</td>
</tr>
<tr>
<td>Surface-Science-Instruments-SSX-100-XPS-System</td>
<td>$185.00 /hr</td>
</tr>
<tr>
<td>Keyence VK-X260 3D Laser Scanning Confocal Microscope</td>
<td>$153.00 /hr</td>
</tr>
<tr>
<td>Asylum-MFP3D-Bio-AFM-SPM</td>
<td>$153.00 /hr</td>
</tr>
<tr>
<td>Bruker Hyperion FT-IR Spectrometer &amp; Microscope</td>
<td>$158.10 /hr</td>
</tr>
<tr>
<td>Renishaw InVia Confocal Raman microscope</td>
<td>$168.30 /hr</td>
</tr>
<tr>
<td>Tencor Alpha Step 500 Stylus Profilometer</td>
<td>$80.00 /hr</td>
</tr>
<tr>
<td>Shimadzu UV-3600 UV-Vis-NIR Spectrometer</td>
<td>$122.40 /hr</td>
</tr>
<tr>
<td>Aviv 400 Circular Dichroism Spectrometer</td>
<td>$132.60 /hr</td>
</tr>
<tr>
<td>Cary 5000 UV Vis NIR Spectrometer</td>
<td>$132.60 /hr</td>
</tr>
<tr>
<td>Edinburgh FLS1000 Fluorescence and Lifetime Spectrometer</td>
<td>$132.60 /hr</td>
</tr>
<tr>
<td>Novocontrol Broadband Dielectric Spectrometer (TSDC)</td>
<td>$22.50 + $132.60 /hr</td>
</tr>
</tbody>
</table>
Soft Matter/Polymer Analysis
- TA Instruments DHR3 Single Head Rheometer $122.40 /hr
- Waters MALDI Micro MX (MALDI-TOF) $214.20 /sample
- JAI-LC9110NEXT-Recycling-Preparative-GPC $214.20 /sample
- Waters Ambient-Temperature GPC $86.70 /sample
- Waters Ambient-Temperature Aqueous GPC $86.70 /sample
- Waters Breeze DMSO-GPC $86.70 /sample
- TA Instruments Q500 Thermogravimetric Analyzer (TGA) $107.10 /sample
- TA Instruments Q1000 Modulated Differential Scanning Calorimeter (MDSC) $168.30 /sample

X-Ray and Diffraction Analysis
- Rigaku SmartLab X-Ray Diffractometer (GADDS) $127.50 /hr
- Bruker D8 General Area Detector Diffraction System (GADDS) $153.00 /hr
- Bruker D8 Powder Diffractometer $153.00 /hr
- Multiwire Back-Reflection Laue Detector $178.50 /hr

Mechanical Properties Testing and Analysis
- TA Instruments DMA Q800 Dynamic Mechanical Thermal Analysis (DMTA) $30 + $112.20 /hr
- TA Instruments Q400EM Thermomechanical Analysis (TMA) $84.15 /hr
- Micro Hardness Tester $15.3 + $15.30 /hr
- Micromechanical Analyzer $52.50 /hr
- ATM Sonic sifter $26.25 /hr

Thin Film Deposition, and Material Processing
- Varian Thermal Bell Jar Evaporator Clark Hall $163.20 /use
- Sputter Deposition $224.40 /use
- KJL Magnetron Sputtering Tool $300.00 /sample
- Neocera EX200 Pulsed Laser Deposition System 114.75 + $23.00 /hr
- KSV-NIMA-KN4010 Dip Coater $20.4 + $42.00 /hr
- KSV-NIMA-KN2002 Langmuir Blandgett Trough $40 + $42.00 /hr
- Laurell WS-400A Spin Coater $30 + $42.00 /hr

Heat Treating
- Lindberg Vacuum Tube Furnace (Bard) $22 + $5.61 /hr
- Marshall Two Zone Tube Furnace 1100C $22 + $5.61 /hr
All other Air/Box Furnaces (Labtemp, Lindberg, and Vulcan) $12.25 + $3.72 /hr
Hotpack or National Vacuum Ovens $12.25 + $3.72 /hr

Electronic & Magnetic Measurements
Quantum Design Physical Property Measurement Systems (PPMS) $71.4 + $32.15 /hr
Lakeshore Full Wafer Probe System $31.50 /hr
Lakeshore Tabletop Magnetic-Cryogenic Probe System $31.50 /hr
GMW-5201 Projected Field Magnet Probe System $18 + $10.20 /hr
Cascade CPS-06 Four Point Probe $18 + $31.50 /hr

Sample Preparation, Cutting, Polishing, etc.
Sample Prep
Enerpac Hydraulic Press $26.25 /hr
Buehler Simplemet II mounting press $20.4 + $26.25 /hr
Inert Gas Glove Box $43.00 /use
Ball Mill $15.75 /hr
Spex 8000 MIXER /MILL $42.00 /hr
Garlock GEM-T Jet mill $26.25 /hr

Cutting/Cleaning/Polishing
MicroMech Wafering Machine $31.5 + $52.50 /hr
Wale Diamond Band Saw $42.00 /hr
Glass Bead Abrasive Unit (sand blasting)-Clark $42.00 /hr
SS White Sand Blasting Unit $31.5 + $42.00 /hr
Buehler SiC Grinding Papers-Bard $52.50 /use
Struers Rotopol $63.00 /hr
Branson Ultrasonic Bath (large) $22 $21.00 /hr

Welding/Bonding
Stationary Spot Welder Hughes HRW250B (Clark Hall) $22.00 /use
WestBond-747630E Wire Bonder $15.3 + $30.60 /hr
TPT HB05 Manual Wire Bonder $15.3 + $30.60 /hr
Kulicke - Soffa 4500 manual bonder $15.3 + $30.60 /hr

Vacuum Equipment
Extorr XT200amu Portable RGA Pump Station 1-Clark $40 + $1.58 /hr
SRS RGA200amu Portable RGA Pump Station 2-Clark $40 + $1.58 /hr
Varian 979 Port Leak Detector $32 + $3.94 /hr
Portable Turbo Pump Stations (Clark Hall or Bard Hall) $20.4 + $1.77 /hr
Test Equipment Lending Library

(more info at http://www.ccmr.cornell.edu/instruments/test-equipment-library/)

- Extech DC and BK Precision AC Power Supplies (9047-9051) $18 + $0.01 /hr
- Agilent E3631A Triple Output Power Supplies (9040-9046) $18 + $0.02 /hr
- GPIB-to-USB Adaptors (9180-9183) $18 + $0.033 /hr
- HP 3325A Function Generators (9072-9076) $18 + $0.072 /hr
- HP 3325A Function Generator with HV option (9077) $18 + $0.085 /hr
- HP 8657B 2GHz Signal Generator (9085) $18 + $0.27 /hr
- FW Bell Hall Probes (9140-9144) $18 + $0.085 /hr
- Extech IRC40 250C Thermal Imager (9152) $18 + $0.0837 /hr
- Optical Pyrometer-Portable-Bard Hall $18 + $0.01 /hr
- Signal Recovery 5113 Preamplifiers (9024-9025) $18 + $0.134 /hr
- Agilent 33521A Arbitrary Waveform Generator (9078) $18 + $0.134 /hr
- Stanford Research SR560 Low Noise Amplifiers (9026-9031) $18 + $0.144 /hr
- HP 85662A Spectrum Analyzer (9130) $18 + $0.15 /hr
- Tektronix TDS2024 Four Channel Digital Oscilloscopes (9101-9104) $18 + $0.17 /hr
- DL Instruments DL1121 Preamplifiers (9020-9022) $18 + $0.20 /hr
- 9065) $18 + $0.2 /hr
- Signal Recovery 7265 Lock-in Amplifier (9001-9009, 9017) $18 + $0.27 /hr
- Stanford Research SR844 RF Lock-in (9000) $18 + $0.53 /hr
- Keithley 6430 Sub-femtoamp Source Meter (9160) $18 + $0.66 /hr
- Agilent 4284A Precision LCR Meter (9171) $18 + $0.85 /hr
- 9109) $18 + $0.125 /hr
- Agilent E8257 PSG Analog Signal Generators (9081-9084) $18 + $1.275 /hr
- Picosecond 10070A Pulse Generators (9091-9092) $18 + $0.92 /hr
- Picosecond 10300B Pulse Generators (9093) $18 + $1.25 /hr
- LeCroy 8500A Wavemaster Oscilloscope (9112) $18 + $1.25 /hr
- LeCroy SDA11000 Oscilloscope (9113) $18 + $1.25 /hr
- Agilent 8722ES Network Analyzer (9123) $18 + $1.275 /hr
- Agilent 8565E Spectrum Analyzer (9132) $18 + $1.275 /hr
- (9170) $18 + $1.275 /hr
<table>
<thead>
<tr>
<th>Description</th>
<th>Price 1</th>
<th>Price 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agilent E4991A RF Impedance/Material Analyzer (9201)</td>
<td>$18 +</td>
<td>$1.275  /hr</td>
</tr>
<tr>
<td>Agilent B1500 Device Analyzer (9203)</td>
<td>$18 +</td>
<td>$1.275  /hr</td>
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