CCMR Shared Facility Rates - Industrial (for-profit) Use
(Effective March 1, 2020)

Manager Labor Rate (may be charged in addition to instrument rates below for assisted use) $158.00 /hr

Electron Microscopy

Arctica-S/TEM $230.00 /hr
Cryo-S/TEM available 4/15/2020
FEI F20 TEM STEM $470.00 /hr
FEI Strata 400 STEM FIB $315.00 /hr
Thermo-Helios-G4-UX-FIB $315.00 /hr
NION UltraSTEM 100 $522.00 /hr
FEI Tecnai 12 BioTwin TEM $230.00 /hr
Zeiss Gemini 500 SEM $230.00 /hr
LEO 1550 FESEM (Keck SEM) $230.00 /hr
Tescan-Mira3-FESEM $230.00 /hr

TEM Sample Preparation:
Allied Multiprep Polishers $100.00 /hr
Allied TechCut5 Precision High Speed Saw $130.00 /hr
Leica EM UC7/FC7 Cryoultramicrotome $130.00 /hr
Leica Ultracut UCT Ultramicrotome - RT $130.00 /hr

Microscopy, Spectroscopy, Surface Analysis

Scienta Omicron ESCA 2SR XPS System $300.00 /hr
Surface-Science-Instruments-SSX-100-XPS-System $130.00 /hr
Keyence VK-X260 3D Laser Scanning Confocal Microscope $160.00 /hr
Asylum-MFP3D-Bio-AFM-SPM $160.00 /hr
Tencor Alpha Step 500 Stylus Profilometer $80.00 /hr
WITec-Alpha300R-Confocal-Raman-Microscope $184.50 /hr
Renishaw InVia Confocal Raman Microscope $172.50 /hr
3i-Marianias-Spinning-Disk-Confocal-Microscope $90.00 /hr
Bruker Hyperion FT-IR Spectrometer & Microscope $160.00 /hr
Bruker Vertex Vacuum FT-IR $160.00 /hr
Cary 5000 UV Vis NIR Spectrometer $136.00 /hr
Shimadzu UV-3600 UV-Vis-NIR Spectrometer $136.00 /hr
Edinburgh FLS1000 Fluorescence and Lifetime Spectrometer $136.00 /hr
Novocontrol Broadband Dielectric Spectrometer $22.50 + $136.00 /hr
Novocontrol Thermal Stimulated Depolarization Current (TSDC) $22.50 + $136.00 /hr
‡ $10 minimum charge

**Soft Matter/Polymer Analysis**

- TA Instruments DHR3 Single Head Rheometer $125.50 /hr
- Waters MALDI Micro MX (MALDI-TOF) $150 + $396.00 /hr
- JAI-LC9110NEXT-Recycling-Preparative-GPC $150 + $162.00 /hr
- Waters Ambient-Temperature GPC $84.00 /hr
- Waters Ambient-Temperature Aqueous GPC $84.00 /hr
- Waters Breeze DMSO-GPC $84.00 /hr
- TA Instruments Q500 Thermogravimetric Analyzer (TGA) $84.00 /hr
- TA Instruments Q1000 Modulated Differential Scanning Calorimeter (MDSC)

**X-Ray and Diffraction Analysis**

- Rigaku SmartLab X-Ray Diffractometer $130.00 /hr
- Bruker D8 General Area Detector Diffraction System (GADDS) $158.00 /hr
- Bruker D8 Powder Diffractometer $158.00 /hr
- Multiwire Back-Reflection Laue Detector $183.00 /hr

**Mechanical Properties Testing and Analysis**

- TA Instruments DMA Q800 Dynamic Mechanical Thermal Analysis (DMTA) $30 + $115.00 /hr
- TA Instruments Q400EM Thermomechanical Analysis (TMA) $87.00 /hr
- Micro Hardness Tester $15 + $15.75 /hr
- Micromechanical Analyzer $54.00 /hr
- Linkham Microscope Tensile Stage $62.00 /hr
- ATM Sonic sifter $27.00 /hr

**Thin Film Deposition, and Material Processing**

- Varian Thermal Bell Jar Evaporator Clark Hall $175.00 /use
- Sputter Deposition $230.00 /use
- KJL Magnetron Sputtering Tool $325.00 /sample
- Neocera EX200 Pulsed Laser Deposition System $115 + $23.75 /hr
- KSV-NIMA-KN4010 Dip Coater $20.4 + $43.00 /hr
- KSV-NIMA-KN2002 Langmuir Blodgett Trough $40 + $43.00 /hr
- Laurell WS-400A Spin Coater $30 + $43.00 /hr
Heat Treating
Lindberg Vacuum Tube Furnace (Clark Hall) $22 + $5.75 /hr
All controlled atmosphere tube furnaces, Bard Hall $22 + $5.75 /hr
All other furnaces and ovens (Labtemp, Lindberg, Vulcan, Hotpack, National) $12.25 + $5.75 /hr

Electronic & Magnetic Measurements
Quantum Design Physical Property Measurement Systems (PPMS) $71.4 + $36.00 /hr
Lakeshore Tabletop Magnetic-Cryogenic Probe System $32.25 /hr
Cascade CPS-06 Four Point Probe $18 + $32.25 /hr

Sample Preparation, Cutting, Polishing, etc.
Sample Prep
Enerpac Hydraulic Press $27.00 /hr
Buehler Simplemet II mounting press $20 + $27.00 /hr
Inert Gas Glove Box $45.00 /use
Fritsch-Planetary-Mill $42.00 /use
Ball Mill $16.00 /hr
Spex 8000 MIXER /MILL $43.00 /hr
Garlock GEM-T Jet mill $27.00 /hr
Cutting/Cleaning/Polishing
MicroMech Wafering Machine $30 + $54.00 /hr
Allied TechCut5 Precision High Speed Saw $130.00 /hr
Glass Bead Abrasive Unit (sand blasting)-Clark $43.00 /hr
SS White Sand Blasting Unit $30 + $43.00 /hr
Buehler SiC Grinding Papers-Bard $54.00 /use
Struers Rotopol $65.00 /hr
Branson Ultrasonic Bath (large) $22 $21.50 /hr
Welding/Bonding
WestBond-747630E Wire Bonder $15 + $31.50 /hr
TPT HB05 Manual Wire Bonder $15 + $31.50 /hr
Stationary Spot Welder Hughes HRW250B (Clark Hall) $22.50 /use

Test Equipment Lending Library
(more info at http://www.ccmr.cornell.edu/instruments/test-equipment-library/)
8000 - Varian 979 Port Leak Detector $18 + $4.04 /hr
8001-8002 - Portable RGA Pump Stations (Extorr or SRS) $18 + $1.62 /hr
<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Rental Fee</th>
<th>Hourly Fee</th>
</tr>
</thead>
<tbody>
<tr>
<td>8011-8013</td>
<td>Portable Turbo Pump Stations (Clark or Bard)</td>
<td>$18 +</td>
<td>$1.81 /hr</td>
</tr>
<tr>
<td>8020-8024</td>
<td>Rough Pumps (Clark Hall)</td>
<td>$18 +</td>
<td>$0.43 /hr</td>
</tr>
<tr>
<td>9078</td>
<td>Agilent 33521A Arbitrary Waveform Generator</td>
<td>$18 +</td>
<td>$0.14 /hr</td>
</tr>
<tr>
<td>9171</td>
<td>Agilent 4284A Precision LCR Meter</td>
<td>$18 +</td>
<td>$0.87 /hr</td>
</tr>
<tr>
<td>9132</td>
<td>Agilent 8565E Spectrum Analyzer</td>
<td>$18 +</td>
<td>$1.31 /hr</td>
</tr>
<tr>
<td>9123</td>
<td>Agilent 8722ES Network Analyzer</td>
<td>$18 +</td>
<td>$1.31 /hr</td>
</tr>
<tr>
<td>9203</td>
<td>Agilent B1500 Device Analyzer</td>
<td>$18 +</td>
<td>$1.31 /hr</td>
</tr>
<tr>
<td>9040-9046</td>
<td>Agilent E3630A Triple Output Power Supplies</td>
<td>$18 +</td>
<td>$0.02 /hr</td>
</tr>
<tr>
<td>9201</td>
<td>Agilent E4991A RF Impedance/Material Analyzer</td>
<td>$18 +</td>
<td>$1.31 /hr</td>
</tr>
<tr>
<td>9081-9084</td>
<td>Agilent E8257 PSG Analog Signal Generators</td>
<td>$18 +</td>
<td>$1.31 /hr</td>
</tr>
<tr>
<td>9170</td>
<td>Andeen Hagerling DCPAX/TP1 Capacitance/Loss Bridge</td>
<td>$18 +</td>
<td>$1.31 /hr</td>
</tr>
<tr>
<td>9020-9022</td>
<td>DL Instruments DL1121 Preamplifiers</td>
<td>$18 +</td>
<td>$0.21 /hr</td>
</tr>
<tr>
<td>9047-9051</td>
<td>Extech DC and BK Precision AC Power Supplies</td>
<td>$18 +</td>
<td>$0.02 /hr</td>
</tr>
<tr>
<td>9152</td>
<td>Extech IRC40 250C Thermal Imager</td>
<td>$18 +</td>
<td>$0.09 /hr</td>
</tr>
<tr>
<td>9154</td>
<td>IRCON Modline 3 Infrared Thermometer-Bard</td>
<td>$18 +</td>
<td>$0.09 /hr</td>
</tr>
<tr>
<td>9155</td>
<td>IRCON Modline Two Color Pyrometer-Bard</td>
<td>$18 +</td>
<td>$0.09 /hr</td>
</tr>
<tr>
<td>9156</td>
<td>Luxtron Optical Fiber Temperature Control System-Bard</td>
<td>$18 +</td>
<td>$0.09 /hr</td>
</tr>
<tr>
<td>9140-9144</td>
<td>FW Bell Hall Probes</td>
<td>$18 +</td>
<td>$0.09 /hr</td>
</tr>
<tr>
<td>9180-9183</td>
<td>GPIB-to-USB Adaptors</td>
<td>$18 +</td>
<td>$0.04 /hr</td>
</tr>
<tr>
<td>9072-9077</td>
<td>HP 3325A Function Generators</td>
<td>$18 +</td>
<td>$0.08 /hr</td>
</tr>
<tr>
<td>9130</td>
<td>HP 85662A Spectrum Analyzer</td>
<td>$18 +</td>
<td>$0.15 /hr</td>
</tr>
<tr>
<td>9085</td>
<td>HP 8657B 2GHz Signal Generator</td>
<td>$18 +</td>
<td>$0.28 /hr</td>
</tr>
<tr>
<td>9160</td>
<td>Keithley 6430 Sub-femtoamp Source Meter</td>
<td>$18 +</td>
<td>$0.68 /hr</td>
</tr>
<tr>
<td>9112</td>
<td>LeCroy 8500A Wavemaster Oscilloscope</td>
<td>$18 +</td>
<td>$1.28 /hr</td>
</tr>
<tr>
<td>9113</td>
<td>LeCroy SDA11000 Oscilloscope</td>
<td>$18 +</td>
<td>$1.28 /hr</td>
</tr>
<tr>
<td>9091-9092</td>
<td>Picosecond 10070A Pulse Generators</td>
<td>$18 +</td>
<td>$0.94 /hr</td>
</tr>
<tr>
<td>9093</td>
<td>Picosecond 10300B Pulse Generators</td>
<td>$18 +</td>
<td>$1.28 /hr</td>
</tr>
<tr>
<td>9024-9025</td>
<td>Signal Recovery 5113 Preamplifiers</td>
<td>$18 +</td>
<td>$0.14 /hr</td>
</tr>
<tr>
<td>9001-9009, 9017</td>
<td>Signal Recovery 7265 Lock-in Amplifiers</td>
<td>$18 +</td>
<td>$0.28 /hr</td>
</tr>
<tr>
<td>9026-9031</td>
<td>Stanford Research SR560 Low Noise Amplifiers</td>
<td>$18 +</td>
<td>$0.15 /hr</td>
</tr>
<tr>
<td>9000</td>
<td>Stanford Research SR844 RF Lock-in</td>
<td>$18 +</td>
<td>$0.54 /hr</td>
</tr>
<tr>
<td>9101-9104</td>
<td>Tektronix TDS2024 Four Channel Digital Oscilloscopes</td>
<td>$18 +</td>
<td>$0.18 /hr</td>
</tr>
<tr>
<td>9107-9109</td>
<td>Tektronix TDS8000 Digital Sampling Oscilloscopes</td>
<td>$18 +</td>
<td>$0.13 /hr</td>
</tr>
<tr>
<td>9060-9065</td>
<td>Yokogawa 7651 DC Programmable Power Sources</td>
<td>$18 +</td>
<td>$0.21 /hr</td>
</tr>
</tbody>
</table>