

CCMR Shared Facility Rates - Academic Use

(Updated August 21, 2024)

|                                                                                                                         |               |              |
|-------------------------------------------------------------------------------------------------------------------------|---------------|--------------|
| Some rates consist of a fixed charge plus an hourly rate or a minimum charge.                                           |               |              |
| For academic users, use exceeding \$12.5k in the calendar year will be charged at 60% of the normal instrument use fee. |               |              |
| Manager Labor Rate (charged in addition to instrument rates below for assisted use)                                     | Academic Rate | \$112.00 /hr |

Electron Microscopy

|                                          |  |                 |
|------------------------------------------|--|-----------------|
| Arctica-S/TEM                            |  | \$1,113.12 /day |
| Transmission Electron Microscopes:       |  |                 |
| Andromeda, Kraken                        |  | \$83.00 /hr     |
| Perseus, Biotwin                         |  | \$80.00 /hr     |
| Titan                                    |  | \$80.00 /hr     |
| Scanning Electron Microscopes            |  |                 |
| Zeiss Gemini/Sigma, Tescan Mira          |  | \$83.00 /hr     |
| Keck                                     |  | \$80.00 /hr     |
| Thermo-Helios-G4-UX-FIB                  |  | \$104.94 /hr    |
| FEI Strata 400 STEM FIB                  |  | \$85.86 /hr     |
| TEM Sample Preparation:                  |  |                 |
| Allied Multiprep Polishers               |  | \$31.50 /hr     |
| Allied TechCut5 Precision High Speed Saw |  | \$53.50 /use    |
| Leica Cryo- & Ultra- Microtomes          |  | \$53.55 /hr     |
| Vibratory Polisher                       |  | \$53.55 /use    |

Microscopy, Spectroscopy, Surface Analysis

|                                                       |        |               |
|-------------------------------------------------------|--------|---------------|
| Thermo Nexsa G2 XPS Surface Analysis System           |        | \$78.00 /hr   |
|                                                       | night  | \$63.00 /hr   |
| Surface-Science-Instruments-SSX-100-XPS-System        | \$30 + | \$5.00 /hr    |
| Keyence VK-X260 3D Laser Scanning Confocal Microscope |        | \$40.00 /hr   |
| Asylum-MFP3D-Bio-AFM-SPM                              |        | \$45.94 /hr   |
| Tencor Alpha Step 500 Stylus Profilometer             |        | \$24.41 /hr   |
| WITec-Alpha300R-Confocal-Raman-Microscope             |        | \$45.00 /hr   |
| Renishaw InVia Confocal Raman Microscope              |        | \$45.00 /hr   |
| 3i-Marianias-Spinning-Disk-Confocal-Microscope        |        | \$24.41 /hr   |
| Bruker Hyperion FT-IR Spectrometer & Microscope       |        | \$45.94 /hr   |
| Bruker Vertex Vacuum FT-IR                            |        | \$45.94 /hr   |
| Cary 5000 UV Vis NIR Spectrometer                     |        | \$37.50 /hr ‡ |

|                                                          |  |                          |   |
|----------------------------------------------------------|--|--------------------------|---|
| Edinburgh FLS1000 Fluorescence and Lifetime Spectrometer |  | \$37.50 /hr              | ‡ |
| JASCO 1500 CD Spectrometer                               |  | \$37.50 /hr              | ‡ |
|                                                          |  | ‡ \$10.50 minimum charge |   |

### Soft Matter/Polymer Analysis

|                                                               |        |              |
|---------------------------------------------------------------|--------|--------------|
| TA Instruments DHR3 Single Head Rheometer                     | \$26 + | \$18.90 /hr  |
| Thermo Fisher Capillary Breakup Extensional Rheometer (CaBER) |        | \$38.12 /hr  |
| Bruker Autoflex Max MALDI                                     |        | \$126.00 /hr |
| Waters Ambient-Temperature GPC                                |        | \$34.00 /hr  |
| Waters Ambient-Temperature Aqueous GPC                        |        | \$34.00 /hr  |
| Waters Breeze DMF-GPC                                         |        | \$34.00 /hr  |
| TA-Instruments-TGA-5500                                       |        | \$34.00 /hr  |
| TA Instruments Auto 2500 Differential Scanning Calorimeter    |        | \$34.00 /hr  |

### X-Ray and Diffraction Analysis

|                                                            |          |             |
|------------------------------------------------------------|----------|-------------|
| Rigaku SmartLab X-Ray Diffractometer                       |          | \$45.94 /hr |
| Bruker D8 General Area Detector Diffraction System (GADDS) | \$7.50 + | \$50.93 /hr |
| Bruker D8 Powder Diffractometer                            |          | \$50.93 /hr |
| Multiwire Back-Reflection Laue Detector                    |          | \$76.13 /hr |

### Mechanical Properties Testing and Analysis

|                                                                    |        |             |
|--------------------------------------------------------------------|--------|-------------|
| TA Instruments DMA Q800 Dynamic Mechanical Thermal Analysis (DMTA) | \$16 + | \$42.42 /hr |
| TA Instruments Q400EM Thermomechanical Analysis (TMA)              |        | \$52.00 /hr |
| Micro Hardness Tester                                              | \$6 +  | \$6.00 /hr  |
| Linkham Microscope Tensile Stage                                   | \$75 + | \$3.00 /hr  |
| ATM Sonic sifter                                                   |        | \$12.50 /hr |

### Thin Film Deposition, and Material Processing

|                                               |           |               |
|-----------------------------------------------|-----------|---------------|
| Varian Thermal Bell Jar Evaporator Clark Hall |           | \$84.53 /use  |
| Sputter Deposition                            |           | \$120.75 /use |
| KSV-NIMA-KN4010 Dip Coater                    | \$5.25 +  | \$13.39 /hr   |
| KSV-NIMA-KN2002 Langmuir Blodgett Trough      | \$10.50 + | \$13.39 /hr   |

|                                                                    |           |             |
|--------------------------------------------------------------------|-----------|-------------|
| Laurell WS-400A Spin Coater                                        | \$10.50 + | \$12.50 /hr |
| <b>Heat Treating</b>                                               |           |             |
| furnace, ovens, air furnaces, controlled atmosphere furnaces, etc. | \$6 +     | \$3.00 /hr  |
| Carbolite 1600C Vacuum Tube Furnace                                | \$6 +     | \$3.60 /hr  |

## Electronic & Magnetic Measurements

|                                                             |        |             |
|-------------------------------------------------------------|--------|-------------|
| Quantum Design Physical Property Measurement Systems (PPMS) | \$35 + | \$14.54 /hr |
| Quantum Design MPMS3 SQUID Magnetometer                     | \$35 + | \$18.00 /hr |
| Lakeshore Tabletop Magnetic-Cryogenic Probe System          |        | \$15.75 /hr |
| Cascade CPS-06 Four Point Probe                             | \$6 +  | \$19.47 /hr |

## Sample Preparation, Cutting, Polishing, etc.

### Sample Prep

|                                                         |        |              |
|---------------------------------------------------------|--------|--------------|
| Enerpac Hydraulic Press                                 |        | \$12.50 /hr  |
| Buehler Simplemet II mounting press                     | \$10 + | \$12.50 /hr  |
| Inert Gas Glove Box (+ monthly storage fee)             |        | \$25.00 /use |
| Labconco Inert Gas GloveBox HQ Graphene 2D Xfer Station | \$16 + | \$8.60 /hr   |
| Ball Mill                                               |        | \$6.34 /hr   |
| Spex 8000 MIXER /MILL                                   | \$23 + | \$2.00 /hr   |

### Cutting/Cleaning/Polishing

|                                                |        |             |
|------------------------------------------------|--------|-------------|
| Glass Bead Abrasive Unit (sand blasting)-Clark |        | \$20.00 /hr |
| SS White Sand Blasting Unit                    | \$10 + | \$20.00 /hr |
| Struers Rotapol                                |        | \$33.69 /hr |

## **Welding/Bonding**

|                                                  |           |             |
|--------------------------------------------------|-----------|-------------|
| WestBond-747630E Wire Bonder                     | \$5 +     | \$12.50 /hr |
| TPT HB05 Manual Wire Bonder                      | \$5 +     | \$12.50 /hr |
| Portable Spot Welder Hughes HRW250B (Clark Hall) | \$12.90 + | \$1 /hr     |

## **Test Equipment Lending Library**

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

Visit the library in D21 Clark Hall to see all instruments, rates, or to consult with staff)

|                                                           |        |            |
|-----------------------------------------------------------|--------|------------|
| 8000-Varian-979-Helium-Leak-Detector                      | \$16 + | \$2.00 /hr |
| 8003 Helium Leak Detector                                 | \$16 + | \$2.50 /hr |
| 8001-8002 - Portable RGA Pump Stations (Extorr or SRS)    | \$16 + | \$1.00 /hr |
| 8010-8013 - Portable Turbo Pump Stations (Clark & Bard)   | \$6 +  | \$0.59 /hr |
| 8020-8024 - Rough Pumps (Clark Hall)                      | \$6 +  | \$0.24 /hr |
| 9000, 9016 - Stanford Research SR844 RF Lock-in Amplifier | \$6 +  | \$0.19 /hr |
| 9001-9009, 9017 - Signal Recovery 7265 Lock-in Amplifiers | \$6 +  | \$0.10 /hr |
| 9015 - Zurich Instruments 50MHz HF2LI Lock-in Amplifier   | \$6 +  | \$0.45 /hr |
| 9014, 9018 - Signal Recovery 7270 Dual Lock-in Amplifier  | \$6 +  | \$0.14 /hr |
| 9023-9025 - Signal Recovery 5113 Preamplifiers            | \$6 +  | \$0.06 /hr |
| 9026-9030 - Stanford Research SR560 Low Noise Amplifiers  | \$6 +  | \$0.06 /hr |
| 9040-9045 - Agilent E3630A Triple Output Power Supplies   | \$6 +  | \$0.02 /hr |
| 9060-9065 - Yokogawa 7651 DC Programmable Power Source    | \$6 +  | \$0.08 /hr |
| 9070 - Agilent 33250A 80MHz Arbitrary Waveform Generator  | \$6 +  | \$0.09 /hr |
| 9072-9076 - HP 3325A Function Generators                  | \$6 +  | \$0.04 /hr |
| 9079 - Agilent 33250A-80MHz Arbitrary Waveform Generator  | \$6 +  | \$0.09 /hr |
| 9080-9084 - Agilent E8257 PSG Analog Signal Generators    | \$6 +  | \$0.45 /hr |
| 9085 - HP 8657B 2GHz Signal Generator                     | \$6 +  | \$0.04 /hr |
| 9091-9092 - Picosecond 10070A Pulse Generators            | \$6 +  | \$0.33 /hr |
| 9107-9109 - Agilent 200MHz Digital Oscilloscopes          | \$6 +  | \$0.05 /hr |
| 9112 - LeCroy 8500A Wavemaster Oscilloscope               | \$6 +  | \$0.45 /hr |
| 9120 - Agilent 35670A 102kHz Dynamic Signal Analyzer      | \$6 +  | \$0.36 /hr |
| 9121 - Agilent E5061A 1.5GHz Network Analyzer             | \$6 +  | \$0.12 /hr |
| 9122 - Hewlett Packard 8753D 6GHz Network Analyzer        | \$6 +  | \$0.39 /hr |
| 9123 - Agilent 8722ES Network Analyzer                    | \$6 +  | \$0.45 /hr |
| 9131 - Agilent E4408B 26.5GHz Spectrum Analyzer           | \$6 +  | \$0.45 /hr |
| 9133 - Agilent 8563E Spectrum Analyzer                    | \$6 +  | \$0.10 /hr |
| 9141-9144 - FW Bell Hall Probes                           | \$6 +  | \$0.04 /hr |
| 9152 - Extech IRC40 Thermal imager                        | \$6 +  | \$0.04 /hr |
| 9164-9167 Keithley Sourcemeters                           | \$6 +  | \$0.11 /hr |
| 9168-9169 Keithley Sourcemeters                           | \$6 +  | \$0.11 /hr |

|                                                                     |       |            |
|---------------------------------------------------------------------|-------|------------|
| 9170-Andeen-Hagerling-2700A-Multi-frequency-Capacitance/Loss-Bridge | \$6 + | \$0.45 /hr |
| 9171-Agilent-4284A-Precision-LCR-Meter                              | \$6 + | \$0.31 /hr |
| 9180-9186 - National-Instruments USB-GPIB adaptors                  | \$6 + | \$0.02 /hr |