

**Materials Characterization Lab (MCL)
Rate Schedule**

Technique		Academic	Unit	Typical Training Time (hr)*	Group
ELECTRON MICROSCOPY					
EPMA	Electron Probe Micro Analyzer ¹	\$75.60	hour	TBD	5
FESEM	Field-Emission Scanning Electron Microscopy (EDS)	\$57.90	hour	4	4
FIB	Focused Ion Beam High Resolution, (OIM), (EDS)	\$75.60	hour	8	5
ESEM	Scanning Electron Microscopy (EDS)	\$40.00	hour	2-5**	3
TEM	Transmission Electron Microscopy: Talos, (EDS)	\$75.60	hour	4	5
TEM	Transmission Electron Microscopy: Tecnai LaB6, (EDS)	\$57.90	hour	4	4
TEM	Transmission Electron Microscopy: Titan ² , (EDS)	\$109.00	hour	8	
MOLECULAR SPECTROSCOPY					
FT-IR	Fourier Transform Infrared Spectroscopy	\$40.00	hour	2.5	3
UV-VIS-NIR	Ultraviolet-Visible Spectroscopy ³	\$40.00	hour	2.5	3
	Confocal Raman	\$40.00	hour	2.5	3
SURFACE ANALYSIS					
AES	Auger Electron Spectroscopy	\$57.90	hour	10	4
	Contact Angle ⁴	\$12.25	hour	1	1
TOF-SIMS	Time of Flight Secondary Ion Mass Spectrometry ¹	\$75.60	hour	TBD	5
XPS	X-ray Photoelectron Spectroscopy	\$57.90	hour	10	4
SURFACE METROLOGY					
AFM	Atomic Force Microscopy	\$40.00	hour	9	3
	Nanoindentation	\$40.00	hour	6-12	3
	Optical Profilometry	\$40.00	hour	2.5	3
MATERIALS PROCESSING					
	Dicing	\$40.00	hour	6	3
	Machine Shop	\$30.00	hour	N/A	
	Optical Microscopy	\$12.25	hour	TBD	1
PREP LAB	Sample Preparation/Polish Lab ⁵	\$40.00	day	0.5 - 1.5	3
	Sample Prep Support Instruments ⁶	\$12.25	hour	*	1
	Sintering Furnaces	\$1.00	hour	0.5	
	Sputter Coating	\$12.25	run	0.5	1
MECHANICAL TESTING					
	EDM	\$40.00	hour		3
	Mechanical Testing Services	\$21.20	hour		2
PARTICLE ANALYSIS					
	Gas Adsorption Analysis/Surface Area ⁴	\$12.25	hour	2	1
	Helium Pycnometry	\$21.20	hour	1.5	2
MIP	Mercury Porosimetry ⁷	\$160.00	sample	TBD	3
	Particle Sizing/Zeta Potential	\$40.00	hour	1.5	3
THERMAL ANALYSIS					
DSC	Differential Scanning Calorimetry	\$21.20	hour	3-5*	2
SDT	Simultaneous DSC and TGA	\$21.20	hour	3-5*	2
TG/MS	Thermal Gravimetric Analysis/Mass Spectrometry	\$21.20	hour	3-5*	2
X-RAY SCATTERING					
XRD	X-ray Diffraction ⁸	\$40.00	hour	2 - 4**	3
XRD	HTK2000N Furnace (add-on to Empryan II)	\$12.25	hour		1
S/WAXS	Small/Wide Angle X-ray Scattering	\$40.00	hour	2 - 4**	3
XRF	X-ray Fluorescence	\$40.00	hour	2 - 4**	3
ELECTRICAL CHARACTERIZATION (Dielectric)⁹					
		\$21.20	hour	1.5	2
TECHNICAL STAFF ASSISTANCE AND OPERATION¹⁰					
		\$61.00	hour	N/A	

¹Capped at 11 hours of usage per day

²Internal use capped at \$1000 per run

³IconIR: 5 hour maximum charge

⁴1 hour minimum charge

⁵1 hour charge/day

⁶1 hour minimum/4 hour maximum, in addition to daily

⁶Cryomill: 1 hour minimum and maximum charge

⁷4 hour minimum/4 hour maximum charge/sample

⁸Laue: 1/2 hour minimum charge

⁹Internal capped at 6 hrs

¹⁰Hourly staff rate is in addition to instrument rates

*Sample and user dependent

**Technique dependent

Rate Effective Date: July 1, 2022

Rates are subject to change without notice