

RCA RESEARCH OPERATIONS RECHARGE CENTER INSTRUMENT RATES

RATES AS Of FEBRUARY 2024. RATES ARE SUBJECT TO CHANGE.

[Recharge Center Web Page](#)

Tool#	Tool Name	Int Rate	Unit	Min Chg	Location
MATERIALS RESEARCH LABORATORY					
SYNTHESIS EQUIPMENT					
C14	ChemSpeed Reactor	\$110.00	Day	1 Day	R1A 1236
C39	10 liter Reactor With Distillation	\$12.50	Hourly	2 Hours	R1A 1238
C40	10 liter Reactor	\$12.50	Hourly	2 hours	R1A 1238
C41	6 liter High Pressure Reactor	\$12.50	Hourly	4 Hours	R1A 1238
C42	High Pressure Parallel Reactors	\$110.00	Day	1 Day	R1A 1236
COATINGS RELATED EQUIPMENT					
C25	UV Curing Apparatus	\$12.50	Hourly	1 Hour	R1A 1232
POLYMER EXTRUSION AND RUBBER PROCESSING					
C44	Polymer Extrusion/Rubber Blending	\$25.00	Hourly	2 Hours	R1A 1238
C46	Two Roll Mill	\$12.50	Hourly	1 Hour	R1A 1238
MISCELLANEOUS EQUIPMENT					
C53	Flaktec Mixer	\$12.50	Hourly	1 Hour	R1A 1226
C51	Glovebox	\$22.50	Day	1 Day	R1A 1232
C54	Corona Treatment Machine	\$32.50	Hourly	1 Hour	R1A 1226
C06	Paint Booth	\$12.50	Hourly	1 Hour	R1A 1238
C18	General Shop Tools	\$12.50	Hourly	1 Hour	R1A 1240
C20	Solvent Stripper	\$4.00	Hourly	4 Hours	R1A 1238
C22	Circular Abrader	\$12.50	Day	1 Day	R1A 1226
C50	Welder	\$12.50	Hourly	1 Hour	R2 128
C56	Sandblaster	\$12.50	Hourly	30 minutes	R2 136
C59	Mortar Grinder	\$25.00	Hourly	30 minutes	R2 128
C60	Sieve Shaker	\$15.00	Hourly	30 minutes	R2 128
MATERIALS CHARACTERIZATION AND TESTING					
ELEMENTAL ANALYSIS					
M02	CHNS-932 Combustion Analyzer + VTF-900 Oxygen Analyzer	\$30.00	Sample	1 Sample	R2 112
RESONANCE METHODS					
M09	ECA Series 400 MHz NMR Spectrometer (NMR)	\$70.00	Hourly	30 minutes	R2-150
SPECTROSCOPY					
M28	Raman Imaging System (RIS)	\$40.00	Hourly	30 minutes	R1A 1132
M06	FTIR Vertex 70 Spectrometer	\$40.00	Hourly	30 minutes	R2 116
SURFACE CHARACTERIZATION					
T09	KLA Tencor Profilometer	\$30.00	Hourly	30 minutes	R2 122C
M11	NT3300 Non-Contact Optical Profiler (OP)	\$40.00	Hourly	30 minutes	R2 116
THERMAL AND THERMOMECHANICAL ANALYSIS					
M12	Q500 Thermogravimetric Analyzer (TGA)	\$15.00	Hourly	30 minutes	R1A 1132
M04	Q800 Dynamic Mechanical Analyzer (DMA)	\$60.00	Hourly	30 minutes	R1A 1132
M03	P-15 Longscan Contact/Stylus Profiler	\$20.00	Hourly	30 minutes	R2 116
M05	Q1000 Modulated Differential Scanning Calorimeter (DSC)	\$30.00	Hourly	30 minutes	R1A 1132
M32	Modulated Differential Scanning Calorimeter (DSC-2)	\$35.00	Hourly	30 minutes	R1A 1132
M13	Thermomechanical Analyzer 2940 (TMA)	\$50.00	Hourly	30 minutes	R1A 1132
X-RAY TECHNIQUES					
M29	Rigaku Ultima IV X-Ray Diffractometer (XRD)	\$60.00	Hourly	30 minutes	R2 152C
M15	Bruker D8 Discover X-Ray Diffractometer (XRD)	\$60.00	Hourly	30 minutes	R2 152C
M30	X-Ray Florescence Spectrometer (XRF)	\$60.00	Sample	1 Sample	R2 152C
M35	X-ray Photoelectron Spectroscopy (XPS) (plus tech time)	\$60.00	Hourly	30 minutes	R1A 1138
M14	Dage X-ray Imaging System (XIS)	\$80.00	Hourly	30 minutes	R2 124A
NON-DESTRUCTIVE INSPECTION					
M31	Scanning Acoustic Microscope (CSAM)	\$50.00	Hourly	30 minutes	R2 116

M34	Scanning Electron Microscope (SEM)	\$40.00	Hourly	30 minutes	R2 116
CROSS-SECTIONING					
M16	1000 Automatic Mounting Press	\$30.00	Hourly	30 minutes	R2 112
M17	3000 Grinder/Polisher	\$20.00	Hourly	30 minutes	R2 112
M18	Isomet 4000 Linear Precision Saw	\$30.00	Hourly	30 minutes	R2 112
ACCELERATED WEATHERING AND CORROSION					
C23	Cyclic Corrosion Tester	\$24.00	Day	1 Day	R1A 1124
C37	QUV Chambers	\$24.00	Day	1 Day	R1A 1124
MECHANICAL TESTING					
M21	TriboIndenter Nanomechanical Testing System	\$10.00	Hourly	30 minutes	R2 116
M26	Electromechanical Testing System / Pull Tester (PT)	\$35.00	Hourly	30 minutes	R2 116
MISCELLANEOUS MEASUREMENT EQUIPMENT					
M10	Microbalance	\$20.00	Hourly	30 minutes	R2 112
C48	Pycnometer	\$15.00	Hourly	1 Hour	R1A 1132
C49	Gas Sorption System /BET Surface Area Measurement	\$25.00	Experiment	1 Experiment	R1A 1132
MICROFABRICATION					
DEPOSITION EQUIPMENT					
T04	Kurt Lesker CMS-18 Sputterer (PVDI)	\$30.00	Hourly	30 minutes	R2 122C
T26	Oxford Plasmalab 100 PECVD2	\$55.00	Hourly	30 minutes	R2 122C
T24	Electroplaters	\$80.00	Hourly	30 minutes	R2 124A
T06	MPM Precision Stencil Printer	\$40.00	Hourly	30 minutes	R2 124A
T19	Gold Target	\$359.36	1000 Angstroms		R2 122C
T28	Platinum Target	\$396.95	1000 Angstroms		R2 122C
PHOTOLITHOGRAPHY EQUIPMENT					
T13	SUSS MA-8 Mask Aligner	\$140.00	Hourly	30 minutes	R2 122B
T11	SUSS RC-8 Spin Coater	\$70.00	Hourly	30 minutes	R2 122B
T86	CEE Spinner	\$30.00	Hourly	30 minutes	R2 122B
T10	Polyimide Oven	\$10.00	Hourly	30 minutes	
T20	YES Oven	\$45.00	Hourly	30 minutes	R2 122B
DRY ETCH EQUIPMENT					
T14	Trion RIE Plasma Etcher	\$60.00	Hourly	30 minutes	R2 122C
WET PROCESSING EQUIPMENT					
T17	Developer	\$50.00	Hourly	30 minutes	R2 122B
T05	KOH Bench - Silicon Wafer Etching	\$85.00	Hourly	30 minutes	R2 122B
T02	Acid Bench	\$75.00	Hourly	30 minutes	R2 122C
T12	Solvent Station	\$65.00	Hourly	30 minutes	R2 122B
T01	Utility Bench	\$15.00	Hourly	30 minutes	R2 122C
ANNEALING/CURING EQUIPMENT					
T03	Flex Ovens	\$10.00	Hourly	30 minutes	R2 122C
T27	Minibrute Tube Furnace	\$30.00	Hourly	30 minutes	R2 122C
FILM CHARACTERIZATION EQUIPMENT					
T25	Ellipsometer	\$40.00	Hourly	30 minutes	R2 122B
T09	KLA Tencor Profilometer	\$30.00	Hourly	30 minutes	R2 122C
T07	Nanometrics Nanospec - Film Thickness	\$30.00	Hourly	30 minutes	R2 122B
T08	Olympus Wafer Inspection & Imaging System	\$20.00	Hourly	30 minutes	R2 122C
T68	Micromanipulator	\$20.00	Hourly	30 minutes	R2 124
MISCELLANEOUS EQUIPMENT					
T22	Semitoool Spin Rinse Dryer (SRD)	\$50.00	Hourly	30 minutes	R2 122C
T21	Optec Laser (temporarily unavailable)	\$40.00	Hourly	1 Hour	R2 112
DEVICE PACKAGING / ELECTRONICS ASSEMBLY					
WIRE AND DIE BONDERS					
T41	High Force Die Bonder	\$70.00	Hourly	30 minutes	R2 126A
T42	Low Force Die Bonder	\$70.00	Hourly	30 minutes	R2 126A
T56	Tresky Semi-Automated Die Bonder	\$50.00	Hourly	30 minutes	R2 126A
T44	K&S 8028 Wire Bonder	\$60.00	Hourly	30 minutes	R2 126A
T55	Westbond Manual Wire Bonder	\$50.00	Hourly	30 minutes	R2 126B

PRINTING / DISPENSING EQUIPMENT					
T45	Milara Screen Printer	\$40.00	Hourly	30 minutes	R2 126A
T34	Camelot Dispenser	\$40.00	Hourly	30 minutes	R2 126B
T49	DEK Stencil Printer	\$40.00	Hourly	30 minutes	R2 126A
PACKAGING AND ASSEMBLY EQUIPMENT					
T36	ADT Wafer Dicing Saw	\$50.00	Hourly	30 minutes	R2 126B
T48	MyData Pick & Place	\$100.00	Hourly	30 minutes	R2 126A
T40	Solderball Attach Tooling	\$25.00	Hourly	30 minutes	R2 126A
T47	Electrovert Reflow Oven	\$50.00	Hourly	30 minutes	R2 126A
T35	Hanmi Mold Press	\$60.00	Hourly	30 minutes	R2 126B
T33	Optec Laminator	\$50.00	Hourly	30 minutes	R2 126B
T23	Microscopes	\$10.00	Hourly	30 minutes	R2 rooms
T29	LPKF Circuit Board Milling Machine	\$40.00	Hourly	30 minutes	R2 112
PROCESS SUPPORT EQUIPMENT					
T53	TrioTech Autoclave	\$25.00	Day	1 Day	R2 126B
T46	Austin America Aqueous Cleaner	\$35.00	Hourly	30 minutes	R2 126A
T31	March Plasma Cleaner	\$45.00	Hourly	30 minutes	R2 126B
T32	CSP Ovens	\$15.00	Day	1 Day	R2 124/126
TEST AND INSPECTION					
T51	Microhardness Tester	\$30.00	Hourly	30 minutes	R2 126A
T50	Dage Pull/Shear tester	\$30.00	Hourly	30 minutes	R2 126A
T39	OGP Measuring System (Smartscope)	\$30.00	Hourly	30 minutes	R2 126A
T38	Checksum Circuit Tester	\$15.00	Hourly	30 minutes	R2 126B
DEVICE TESTING					
T87	Keithley Multimeter	\$25.00	Day	1/2 Day	R2 112
T61	Battery Tester	\$35.00	Day	1/2 Day	R1A 1130
T67	Cascade Probe Station	\$35.00	Day	1/2 Day	R2 112
T68	Micromanipulator	\$20.00	Hourly	30 minutes	R2 124
T70	Agilent PNA-X Vector Network Analyzer	\$65.00	Day	1/2 Day	R2 120
T71	Tektronix Real-Time Spectrum Analyzer	\$45.00	Day	1/2 Day	R2 120
T72	Agilent Spectrum Analyzer	\$45.00	Day	1/2 Day	R2 120
T73	RF Signal Generator	\$45.00	Day	1/2 Day	R2 120
T74	RF Impedance/Material Analyzer	\$45.00	Day	1/2 Day	R2 120
T75	METCAL APR-5000 Rework Station	\$25.00	Day	1/2 Day	R2 120
T76	RF Power Meter	\$35.00	Day	1/2 Day	R2 120
T77	Logic Analyzer	\$35.00	Day	1/2 Day	R2 120
T78	Oscilloscope	\$35.00	Day	1/2 Day	R2 120
T79	Pulse Pattern Generator	\$35.00	Day	1/2 Day	R2 120
T80	Function Generator	\$25.00	Day	1/2 Day	R2 120
T81	Soldering Station	\$20.00	Day	1/2 Day	R2 120
T83	Semiconductor Analyzer	\$45.00	Day	1/2 Day	R2 120
RELIABILITY AND FAILURE ANALYSIS					
RELIABILITY TESTING					
T82	Free Fall Shock Machine (Drop Tester)	\$30.00	Hourly	1 Hour	R2 112
T54	Espec Temperature/Humidity Chamber	\$24.00	Day	1 Day	R2 112
T58	Thermal Shock Chamber	\$30.00	Day	1 Day	R2 112
C23	Cyclic Corrosion Tester	\$24.00	Day	1 Day	R1A 1124
C37	QUV Chambers	\$24.00	Day	1 Day	R1A 1124
NON-DESTRUCTIVE INSPECTION					
T64	Thermal IR Camera	\$30.00	Hourly	30 minutes	R2 112
M31	Scanning Acoustic Microscope (CSAM)	\$50.00	Hourly	30 minutes	R1 116
M14	Dage X-ray Imaging System (XIS)	\$80.00	Hourly	30 minutes	R2 124A
M34	Scanning Electron Microscope (SEM)	\$40.00	Hourly	30 minutes	R2 116
SAMPLE PREPARATION					
M16	1000 Automatic Mounting Press	\$30.00	Hourly	30 minutes	R2 112
M17	3000 Grinder/Polisher	\$20.00	Hourly	30 minutes	R2 112
M18	Isomet 4000 Linear Precision Saw	\$30.00	Hourly	30 minutes	R2 112

T84	Acid Decapsulator	\$60.00	Hourly	30 minutes	R2 124A
T85	HAST Chamber	\$30.00	Day	1 hour	R2 112
MISCELLANEOUS EQUIPMENT					
T62	Dimension Elite 3D Printer	\$15.00	Hourly	30 minutes	R2 112
T57	Orbital Welder (Swagelok)	\$40.00	Hourly	30 minutes	R2 124