Analysis Research Service Center (ARSC) user rates-effective 5/1/23

Fee description	Comments	External	Internal
Tier 1 hourly equipment fee	per piece of equipment, same rate for training	<mark>\$30</mark>	<mark>\$10</mark>
Tier 2 hourly equipment fee	per piece of equipment, same rate for training	<mark>\$45</mark>	<mark>\$15</mark>
Tier 3 hourly equipment fee	per piece of equipment, same rate for training	<mark>\$75</mark>	<mark>\$25</mark>
Tier 4 hourly equipment fee	per piece of equipment, same rate for training	<mark>\$105</mark>	<mark>\$35</mark>
Tier 5 hourly equipment fee	per piece of equipment, same rate for training	<mark>\$150</mark>	<mark>\$50</mark>
Tier 6 hourly equipment fee	per piece of equipment, same rate for training	<mark>\$225</mark>	<mark>\$75</mark>
Monthly project cap*	external soft cap: rate=internal after cap	\$3,500	<mark>\$700</mark>
Monthly project minimum charge	only billed when facility is accessed	<mark>\$500</mark>	<mark>\$100</mark>
*excludes purchased consumables (e.g	g. specialty chemicals, deposition materials, substrates, t	weezers, notebooks,	etc.)









ARSC Equipment Tiers

			C
Equipment Name	Equipment Tier	Approx. Training Time (hrs)	Leica TXP Microscopy Sample Prep System
Linear Four Point Probe	1	2	Optical Microscope
Hermes	1	2	XRF
Pelco Dimpler	1	2	Raman-AFM
Ultrasonic Disk Cutter	1	2	VSM
UV-Vis Spectrometer	1	2	Argon Polisher
Wire Saw	1	2	AFM
Wire Bonder	1	2	XRD
Surface Profilometer	2	2	Dynacool PPMS
Critical Point Dryer	2	2	ICP-MS
Cronus	2	2	Nexsa XPS
Leica Cryotome	2	4	FV3000 Laser Scanning Confo Microscope
Ellipsometer	2	2	SEM
FTIR	2	2	Talos TEM
Hirox Digital Microscope	2	2	Leica Cryo-ultramicrotome
Glass Knife Maker	2	2	JOEL SEM

Equipment Name	Equipment Tier	Approx. Training Time (hrs)
Imaging Sputter Coater - Au, Ir, C	2	2
Leica TXP Microscopy Sample Prep System	2	2
Optical Microscope	2	2
XRF	3	4
Raman-AFM	3	4
VSM	3	6
Argon Polisher	4	2
AFM	4	4
XRD	4	4
Dynacool PPMS	5	6
ICP-MS	5	6
Nexsa XPS	6	6
FV3000 Laser Scanning Confocal Microscope	5	6
SEM	6	6
Talos TEM	6	6

2 for room temp, 3 for cryo

4 for standard, 5 for CL

ARSC Equipment Consumables – External Pricing Rates **For consumable internal pricing, divide external pricing by 1.495

Item	External Price
FIB	\$7.48/hour
Gold	\$4.50/run
Iridium	\$14.95/run
1 run = 2nm of Iridium or Gold	
Parafilm Embedding Center	\$15.05/hour
Quartz 8mm perpendicular sample holder	\$224.25/ea.
Quartz 8mm transverse sample holder	\$194.35/ea.
Boron Nitride Spacer	\$451.39/ea.
Boron Nitride Cup	\$367.77/ea.
PCTFE Spacer (threaded)	\$197.34/ea.
PCTFE Cup (threaded)	\$98.67/ea.
AFM Tips Type A, HQ.NSC14/Al BS, 160kHz, 5N/m, 125μm	\$16.45/ea.
AFM Tips Type D, HQ.NSC15/Al BS, 325kHz, 40N/m, 125μm	\$26.91/ea.
AFM Tips Type E, HQ.NSC19/Al BS, 65kHz, 0.5N/m, 125μm	\$26.91/ea.
AFM Tips Type F, RTESPA-525, 525kHz, 200N/m, 125μm	\$49.34/ea.
AFM Tips Type K, HQ.NSC14/Pt, 160kHz, 5N/m, 125μm	\$25.42/ea.
AFM Tips Type L, HQ.NSC15/Pt, 325kHz, 40N/m, 125μm	\$28.41/ea.
AFM Tips Type P, PtSi-FM, 75kHz, 2.8N/m, 225μm	\$198.84/ea.
PELCO® Center-Marked Grids, 200 mesh, Nickle	\$43.48/100 grids
PELCO® Slot Grids, 1 x 2mm, Molybdenum	\$137.78/25 grids
PELCO® Slot Grids, 1 x 2mm, Aluminum	\$166.00/25 grids
PELCO® FIB Lift-Out TEM Grids, 2 wide posts, Copper	\$129.40/100 grids
Carbon Type-B, 200 mesh TH, Nickle	\$174.30/50 grids
Lacey Formvar/Carbon, 200 mesh, Copper approx. grid hole size: 97μm	\$195.88/50 grids
PELCO® TEM Grid Storage Box	\$7.80/ea.

Nanofabrication Research Service Center (NRSC) user rates-effective 5/1/23*

Fee description	Comments	External	Internal
Daily access fee per user	Unlimited entry/re-entry 00:00-24:00 for the date accessed	<mark>\$30</mark>	<mark>\$10</mark>
Tier 1 hourly equipment fee	Per piece of equipment, same rate for training	<mark>\$45</mark>	<mark>\$15</mark>
Tier 2 hourly equipment fee	Per piece of equipment, same rate for training	<mark>\$60</mark>	<mark>\$20</mark>
Tier 3 hourly equipment fee	Per piece of equipment, same rate for training	<mark>\$75</mark>	<mark>\$25</mark>
Tier 4 hourly equipment fee	Per piece of equipment, same rate for training	<mark>\$90</mark>	<mark>\$30</mark>
Tier 5 hourly equipment fee	Per piece of equipment, same rate for training	<mark>\$105</mark>	<mark>\$35</mark>
Monthly project cap*	External soft cap (internal rate after cap)	<mark>\$3500</mark>	<mark>\$700</mark>
Monthly project minimum charge	Only billed when facility is accessed	<mark>\$500</mark>	<mark>\$100</mark>
excludes purchased consumables (e	.g. specialty chemicals, deposition materials, substrates, tweeze	ers, notebooks, etc.)	



NRSC Fauinment Tiers

	Module	
Equipment		Tier
NRSC Teaching Bay SS Hood	Etch	0
NRSC Vacuum Oven	Thermal	0
NRSC Teaching Bay Four Point Probe	Metrology	1
NRSC Axiotron Microscope	Metrology	1
NRSC Olympus Microscope	Metrology	1
NRSC Oxidation Furnace-Dry	Thermal	1
NRSC Oxidation Furnace-Wet	Thermal	1
NRSC HMDS Oven	Lithography	1
NRSC Chimera Wet Hood	Etch	1
NRSC 3-Zone Tube Furnace	Thermal	2
NRSC Teaching Bay Lithography Stations	Lithography	2
NRSC Teaching Bay PVD	Deposition	2
NRSC Teaching Bay NRP-4000 Etch/PVD tool	Etch/Deposition	2
NRSC Hydra Wet Hood	Etch	2

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quipment	Module
RSC Probestation (Zeus)	Metrology
RSC PE50 O2 Plasma Asher	Etch
RSC Teaching Bay F20 Filmetrics	Lithography
RSC Teaching Bay N-Type (P) Doping Furnace	Thermal
RSC Teaching Bay P-Type (B) Doping Furnace	Thermal
RSC Teaching Bay Etch Station	Etch
RSC F50 FILMETRICS	Metrology
RSC Surface Profilometer	Metrology
RSC PECVD	Deposition
RSC Wafer Bonder	Lithography
RSC SuSS MJB4 Contact Aligner	Lithography
RSC RTP	Thermal
RSC Xanthos Hood	Lithography
RSC AJA Magnetron Sputter	Deposition
RSC PEALD	Deposition
RSC Oxford ICP/RIE	Etch
RSC Ebeam Evaporator	Deposition

Tier

NRSC Consumables Costs

Consumable	unit	internal \$/unit	external \$/unit
100mm DIA Si test grade wafer	Ea.	\$9.00	\$13.46
Gold PVD	500 Angstroms	\$35.00	\$52.33
Platinum PVD	500 Angstroms	\$35.00	\$52.33
Cleanroom notebook	Ea.	\$10	\$14.95
Wafer tweezers	Ea.	\$36.00	\$53.82
Diamond scribe	Ea.	\$17.00	\$25.42
Kapton tape	roll	\$9.00	\$13.46