

SNF FY23 Rates

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Equipment Use ¹				
Lab	Rate Class	Academic ³	Industry ³	Industry: SBIR ³
Cleanroom ²	Base Rate \$/hr < Soft Cap	\$50	\$145	\$120
	Monthly Soft Cap	\$3,500	\$14,500	\$12,000
	Above Soft Cap	25% of hourly rates		
	Epitaxial Deposition (Epi2/2B)	\$70	\$140	\$115
ExFab ^{4,5}	1	\$3	\$9	--
	2	\$5	\$15	--
	3	\$10	\$30	--
	4	\$20	\$60	--
	5	\$35	\$105	--
MOCVD ^{4,5}	MOCVD	\$100/\$50	\$240/\$120	--
Other Fees ¹				
Service	Description	Rate		
Staff Support	Training Recharge \$/hr	\$100.00		
	Staff Support \$/hr	\$100.00		
Stores	Inventory / Subscriptions	Refer to Stores price list sheets		

- (1) **FY23 Rates:** Badger reports direct costs, as per this rate sheet. Additional Facilities & Administration (F&A) overhead of 55.3% (<https://doresearch.stanford.edu>) is applied to invoices for non-Stanford organizations, other than U.S. academic and government institutions which are subject to 8% F&A.
- (2) **Cleanroom Soft Cap:** Cleanroom tools come under the [Soft Cap fee structure](#), with these exceptions:
 - a. **Epi2/2B** are excluded from the Soft Cap and charged on a straight hourly basis.
 - b. **Precious Metals** use is charged as describe in (6).
 - c. **No-Charge Tools in the Cleanroom include:**
 - i. Analytical: microscopes, stylus profilometers (p2, alphastep), nanospec, surfscan, Filmetrics
 - ii. Ovens: 90C post-spin bake, 110C pre-bake, 150C singe, BlueM programmable and white-oven
 - iii. Solvent benches: no charge for rinsing & soaking; charge for module (heaters, sonicators).
 - iv. Miscellaneous: mask cleaner, uv cure, technics
- (3) **Rate Categories:** Academic rates apply Stanford/SLAC, other academic institutions, government, not-for-profit entities, and entities under SNF Research Participation agreement. Industrial rates apply to for-profit entities; those supported by SBIR award are eligible for Cleanroom SBIR rate.
- (4) **ExFab:** Soft cap does not apply to this lab. ExFab metals are charged as shown on the Stockroom price sheet.
- (5) **MOCVD:** Soft cap does not apply to this lab. Full rate apply to process runs; chamber conditioning/bakeout runs are charged at ½ the process run rate. MOCVD metal organic precursors, UDMHy, TBP, and TBAs, are charged at \$40/gram when an excess of 3 grams is used in a single process run.

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ExFab Equipment by Process and Rate Class			
Deposit		Characterize	
Aixtron Graphene Furnace	5	AFM-Asylum	4
Carbon Nanotube Furnace	4	Alphastep Profilometer	No cost
Lesker Sputter 1/2 ⁶	5	Nanospec	No cost
AJA Evaporator 1/2 ⁶	5	S-neox	No cost
Hummer Evaporator	5	Keyence 3D Microscope	5
Parylene Coater	5	Cytoviva Hyperspectral Analyzer	4
		Malvern Dynamic Light Scatter	4
		Jasco-UV/Vis/NIR Spectrometer	4
Pattern			
Heidelberg MLA 150 1/2	5	Biologic Potentiostat	No cost
Nanoscribe 3D Printer	3	Semilab LEI Eddy Current	2
Alveole Primo	4	Micromanipulator Probe Station	2
Nanoinkjet	3	Sinton Lifetime Tester	2
Optomec Aerosol Jet Printer	3	Hall Measurement System	3
3D Wax Printer	1		
Form2 3D SLA Printer	1	Wet Process	
Voltera	2	Headway 3 Manual Spinner	3
		SCS G3 Spincoater	3
Machine/Bond/Mold		Laurell Develop/Etch Processer	3
Chemical Mechanical Polish	5	Micromist Electro Spray Coater	3
DISCO Wafersaw	5	Wet Bench for Develop	3
DISCO Backgrind	5	Wet Bench for Solvents	3
Laser Cutter	4	Thinky Mixer	3
Minitech Micromill	3	Centrifuge	No cost
Modela CNC Micromill	No cost	Disperser	No cost
Manual Micro Drill Press	No cost	Sonicator	No cost
Flipchip Bonder	5		
Idonus Chip Bonder	No cost	Heat/Cure/Surface Modify	
XPlore Microcompounder	3	Red Devil Hi T Furnace	1
Heat Seal Press	No cost	Thermoscientific Oven	2
		YES HMDS Prime Oven #2	5
Controlled Environment		Plasma Etcher	4
Fumehood #1-4	2	Dymax UV Cure	No cost
Glovebox-Left/Right	1	Oriel DUV	No cost
		Hotplate-1	2
		Dry Film Laminator	No cost

- (6) **Precious Metals:** Precious metal pricing is based on the average market price for the previous year. In the Cleanroom, metals are charged by the gram and will appear in equipment use fees for Cleanroom tools. In ExFab, metals are charged by the nm and logged through ExFab Stockroom inventory charges. FY23 rates are:

Metal	\$/g	\$/nm
Au	\$ 56	\$ 1.23
Ir	\$ 148	\$ 3.25
Pd	\$ 68	\$ 1.49

Metal	\$/g	\$/nm
Pt	\$ 32	\$ 0.70
Rh	\$505	\$11.10
Ru	\$ 19	\$ 0.42