

# SNF FY20 Lab Use Rates

Equipment Use <sup>1</sup>				
Lab	Rate Class	Academic <sup>3</sup>	Industry <sup>3</sup>	Industry: SBIR <sup>3</sup>
Cleanroom <sup>2</sup>	Base Rate \$/hr < Soft Cap	\$50	\$135	\$110
	Monthly Soft Cap	\$3,500	\$13,500	\$11,000
	Above Soft Cap	25% of hourly rates		
	Epitaxial Deposition (Epi2/2B)	\$70.00	\$140	\$112
ExFab <sup>4,5</sup>	1	\$3	\$9	--
	2	\$5	\$15	--
	3	\$10	\$30	--
	4	\$20	\$60	--
	5A	\$35	\$105	--
	5B	\$35	\$70	--
	Raith	\$70.00	\$140	--
MOCVD <sup>4</sup>	MOCVD	\$100	\$240	--
Other Fees <sup>1</sup>				
Service	Description	Rate		
Staff Support	Training Recharge \$/hr	\$80.00		
	Staff Support \$/hr	\$80.00		
Stores	Inventory / Subscriptions	Refer to Stores price list sheets		

- (1) **FY20 Rates:** Badger reports direct costs, as per this rate sheet. Additional Facilities & Administration (F&A) overhead (<https://doresearch.stanford.edu>) is applied to invoices. In FY20, U.S. academic and government organizations are subject to 8% F&A; all other external entities are subject to 57.7%.
- (2) **Cleanroom Soft Cap:** Cleanroom tools come under the Soft Cap fee structure. The exceptions are:
  - a. **Epi2/2B** are excluded from the Soft Cap and charged on a straight hourly basis.
  - b. **Precious Metals** use is charged by gram and based on the weighted market price for this year, rounded up to the nearest \$1: Gold-\$42; Platinum-\$27, Iridium-\$48; Palladium-\$43. Precious metal use is incorporated into the equipment charges for metallization tools.
  - c. **No-Charge Tools:**
    - i. Analytical tools: microscopes, stylus profilometers (p2, alphastep), nanospecs, surfscan4500
    - 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
- (3) **Rate Categories:** Academic rates apply to: Stanford/SLAC, non-Stanford academic institutions, government, not-for-profit entities, and entities covered by SNF Research Participation. Companies supported by a verifiable SBIR award are eligible for the SBIR rate (Cleanroom only.) All other independent entities receive the Industrial rate.
- (4) **ExFab and MOCVD labs:** Soft cap does not apply to these labs. Precious metals are charged as a Stores item as follows: Gold-\$0.92 /nm, Platinum-\$0.59/nm, Iridium-\$1.05/nm, Palladium- \$0.95/nm. MOCVD precursor use in excess of 3 grams per run will be charged at \$40/gram. This fee applies to the following precursors and is incorporated into equipment charges: UDMHy, TBP, and TBAs.

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ExFab Equipment by Area and Rate Class			
Area/Equipment	Rate Class	Area/Equipment	Rate Class
<b>Deposition</b>		<b>Characterization</b>	
Aixtron Graphene Furnace	5B	AFM-Asylum	4
Carbon Nanotube Furnace	5B	AFM #2	3
Hummer Evaporator	5B	Alphastep Profilometer	No cost
Parylene Coater	5B	Cytoviva Hyperspectral Analyzer	4
Lesker Sputter 1/2	5A	Semilab LEI Eddy Current	2
AJA Evaporator	5A	Jasco-UV/Vis/NIR Spectrometer	4
		Keyence 3D Microscope	5A
<b>Patterning</b>		<b>Wet Processing</b>	
3D Wax Printer	1	Malvern Dynamic Light Scatter	4
Form2 3D SLA Printer	1	Micromanipulator Probe Station	2
Alveole Primo	4	Nanospec	No cost
Nanoinkjet	3	Biologic	No cost
Raith EBeam Writer	Raith	S-neox	No cost
Heidelberg MLA 150 1/2	5A	Sinton Lifetime Tester	2
Nanoscribe 3D Printer	5A	Hall Measurement System	2
Optomec Aerosol Jet Printer	3		
Voltera	2	<b>Other</b>	
		Headway 3 Manual Spinner	3
		Laurell Develop/Etch Processer	3
<b>Machining</b>		Micromist Electrospray Coater	3
Chemical Mechanical Polish	5B	Wet Bench for Develop	3
DISCO Wafersaw	5A	Wet Bench for Solvents	3
DISCO Backgrind	5B		
Minitech Micromill	3		
Thermolyne Muffle Furnace	1	Centrifuge	No cost
Laser Cutter	4	Disperser	No cost
Modela CNC Micromill	No cost	Flipchip Bonder	5A
Manual Micro Drill Press	No cost	Oriel DUV	No cost
		Sonicator	No cost
<b>Controlled Environment</b>		SCS G3 Spincoater	3
Fumehood #1-4	1	Thermoscientific Oven	2
Glovebox-Left/Right	1	Thinky Mixer	3
		Heat Seal Press	No cost
		Plasma Etcher	4
		Hotplate-1	2
		Dry Film Laminator	1
		Dymax UV Cure	1
		XPlore Microcompounder	4
		YES HMDS Prime Oven #2	5A
MOCVD Equipment			
Area/Equipment	Rate Class		
Aixtron 200 (GaAs)	MOCVD		
Aixtron CCS (GaN)	MOCVD		