

NSFL Billing Rates – October 2020

Equipment usage at the NSFL is charged on an hourly rate basis, and is as follows:

- The hourly rate is applied in full for the first \$5,000 of equipment usage per year.
- Usage beyond \$5,000 is charged at $\frac{2}{3}$ the posted hourly rate.

Standard Hourly rates:

Equipment	Internal U of M Engineering	Outside U of M Engineering	Industry rate
Thermal evaporator	\$40	\$45	\$120
MRC sputter system	\$40	\$45	\$120
KJL super system co-sputtering system	\$60	\$65	\$180
Sputtering gold (per μm thickness)	\$250	\$250	\$250
PETS PECVD	\$60	\$65	\$180
Trion Phantom II ICP-RIE	\$45	\$50	\$135
PETS plasma etcher	\$30	\$35	\$90
XeF ₂ etcher	\$30	\$35	\$90
Lithography (includes chemicals, HMDS, ovens)	\$35	\$40	\$105
Wet decks (includes basic chemicals, spin rinse dryer)	\$35	\$40	\$105
Wet decks only (user supplies chemicals)	\$25	\$30	\$75
Electroplating system	\$40	\$45	\$120
Oxidation furnace, annealing furnace	\$15	\$20	\$45
Microscopes, UV ozone cleaner	\$15	\$20	\$45
Alpha step, Nanospec, FLX-2320, Ellipsometer, Prism Coupler	\$20	\$25	\$60
Diamond Touch wafer saw	\$40	\$45	\$120
Wire bonding	\$50	\$55	\$150
AFM / SPM equipment, Photomap 3D	\$30	\$35	\$90
High voltage supplies, multimeters, etc.	--	\$40	\$50
Supervision, labour, training by NSFL staff	\$60	\$60	\$100

- All charges are for a minimum of 1 hour.
- Industry usage can be subject to additional U of M overhead.
- Fees gathered cover general cleanroom costs (gloves, chemicals, DI / N₂ generation, process gases, etc.) and general equipment maintenance (pump oil, general spare parts, etc.)
- Fees do not cover resale items (substrates, cleanroom books, etc.), precious metals, specialized chemicals, and extra costs for certain processes.
- Equipment broken by careless use is to be paid for by the people who broke it (crashed turbo pump, dropping a photoresist bottle, breaking microscope objective, etc.).