

**UNIVERSITY OF LOUISVILLE  
MICRO/NANO TECHNOLOGY CENTER RATES  
RATES EFFECTIVE FOR APRIL 1, 2021**



Go to the link below to learn how to gain access to the MNTC.

<http://louisville.edu/micronano/users/how-to-become-a-user>

Clients of the MNTC will be charged a daily cleanroom access fee and associated equipment fees.

**Daily Access Fee for the Cleanroom:**                      **Internal User:** \$10/day  
**External User:** \$34/day

**Cleanroom Equipment Usage Fee:** The usage rates are defined below for internal users, external users and services. A cap of **\$1,500** per month for the cleanroom per researcher will be implemented for equipment usage, access fees and training for internal users only. This cap does not include consumables (wafers, wafer containers, tweezers, etc.) or services performed by the MNTC staff (i.e. dicing and photomasks). **A cap is not instituted for external clients using the Cleanroom or the Huson Imaging & Characterization Laboratory (HICL).**

Equipment	Internal Rate	External Rate	Service Center Rate Internal	Service Center Rate External
Dektak Profilometer	\$0.25/min	\$0.50/ min	<b>\$60/hour</b> for training and labor (does not include tool rate)	<b>\$100/hour</b> for training and labor (does not include tool rate)
Filmetrics Film Measurement System	\$0.25/min	\$0.50/ min		
Toho Thin Film Stress Measurement	\$0.25/min	\$0.50/ min		
Spinners	\$0.25/min	\$0.50/ min		
Ultrasonic Bath	\$0.25/min	\$0.50/ min		
Zeiss Axioscope Optical Microscope	\$0.25/min	\$0.50/ min		
Flip Chip Bonder	\$0.50/min	\$0.85/min		
QFI Thermal Imaging System	\$0.50/min	\$0.85/min		
Zygo Optical Laser Profilometer	\$0.50/min	\$0.85/min		
Vase Ellipsometer	\$0.50/min	\$0.85/min		
Critical Point Dryer	\$0.50/min	\$0.85/min		
Ball /Wedge Bonder	\$0.60/min	\$1.00/min		
Hi-Speed Camera	\$0.60/min	\$1.00/min		
March RIE	\$0.60/min	\$1.00/min		
Rapid Temperature Processing (RTP/RTA)	\$0.60/min	\$1.00/min		
ABM Aligner	\$0.70/min	\$1.15/min		
DRIE	\$0.70/min	\$1.15/min		
Lesker E-beam Evaporator (**extra for Au)	\$0.70/min	\$1.15/min		
Lesker PVD 75 (**extra for Au and Pt)	\$0.70/min	\$1.15/min		
Molecular Vapor Deposition (MVD)	\$0.70/min	\$1.15/min		
Oxford PECVD	\$0.70/min	\$1.15/min		
Suss Aligner	\$0.70/min	\$1.15/min		
Suss Bonder	\$0.70/min	\$1.15/min		
Technics Sputterer	\$0.70/min	\$1.15/min		
Trion Metal Etcher	\$0.70/min	\$1.15/min		
Hitachi SEM	\$1.00/min	\$1.60/min		
Xactix XeF <sub>2</sub> Isotropic Etching	\$1.00/min	\$1.60/min		

HF Vapor Etcher	\$1.00/min	\$1.60/min		
Beneq ALD	\$1.00/min	\$1.60/min		

	Equipment	Internal Rate	External Rate	Service Center Rate Internal	Service Center Rate External
	HF-8 Axic Barrel Asher	\$30/batch	\$45/batch	\$60/hour for training and labor (does not include tool rate)	\$100/hour for training and labor (does not include tool rate)
	Reynolds Electroplating Bench	\$30/batch	\$45/batch		
	Tube Furnace (Anneal, Oxidation, Diffusion)	\$40/batch	\$60/batch		
Wet benches	RCA Clean Hood (RCA Cleaning)	\$40/batch	\$60/batch		
	305 Acid Hood (Nanostrip, Aluminum Etch, Chrome Etch, BOE)	\$40/batch	\$60/batch		
	307 Base Hood (KOH, TMAH)	\$40/batch	\$60/batch		
	308 EDP Etch Hood (Gold Etch, Copper Etch)	\$40/batch	\$60/batch		
	YES Polyimide Oven	\$45/batch	\$70/batch		
	YES Image Reversal Oven	\$45/batch	\$70/batch		
	Parylene Deposition System	\$45/batch	\$70/batch		

### ADDITIONAL FEES

Fees	Internal Users	External Users
Training	\$60/hour	\$100/hour
**Gold/Platinum Deposition	\$20/0.10 gram	\$35/0.10 gram
Dicing ( <i>Process performed by MNTC staff ONLY, Service fee included</i> )	\$60/per wafer \$1/minute after 1 <sup>st</sup> hour if required	\$100/per wafer \$1/minute after 1 <sup>st</sup> hour if required
Dewar Fill (LN <sub>2</sub> )	\$45/fill	N/A

### PHOTOMASKS

Photomasks ( <i>Process performed by MNTC staff ONLY, Service fee included</i> )	Internal Users	External Users
4" substrates Resolution 6 um and larger	\$125	\$200
6" substrates Resolution 6 um and larger	\$225	\$300
CAD File Development	\$60/hour	\$100/hour

Smaller resolutions can be obtained down to 1 um for photomasks. Contact us for details and pricing at [mntc@louisville.edu](mailto:mntc@louisville.edu)

**A usage fee is not assessed on the following items, but does not exclude MNTC labor fees.**

Spin Rinse Dryers, Vacuum Ovens, Four Point Probe, Probe Station, Solvent Wet Bench, Developer Wet Bench (LF8-1A Solvent Develop Hood), Developer Wet Bench (115X Base Develop Hood) & PDMS Spinner.

## CONSUMABLES/SUPPLIES

Item	Internal Rate	External Rate
Photoresist S1805, bottle 50 g	\$38	\$60
Photoresist S1805, bottle 100 g	\$53	\$80
Photoresist S1813, bottle 50 g	\$40	\$60
Photoresist S1813, bottle 100 g	\$56	\$85
Photoresist S1827, bottle 50 g	\$56	\$85
Photoresist S1827, bottle 100 g	\$78	\$120
Photoresist SPR 220-3.0, bottle 50 g	\$58	\$90
Photoresist SPR 220-3.0, bottle 100 g	\$81	\$125
Photoresist SPR 220-7.0, bottle 50 g	\$60	\$90
Photoresist SPR 220-7.0, bottle 100 g	\$84	\$130
Photoresist AZ4620, bottle 50 g	\$60	\$90
Photoresist AZ4620, bottle 100 g	\$84	\$130
Polyimide 2611, bottle 50 g	\$56	\$85
Polyimide 2611, bottle 100 g	\$78	\$120
4" Non-Oxidized Prime SSP Wafers	\$25/wafer	\$35/wafer
4" Oxidized Prime SSP Wafers	\$35/wafer	\$50/wafer
4" Non-Oxidized Prime DSP Wafers	\$35/wafer	\$50/wafer
4" Oxidized Prime DSP Wafers	\$45/wafer	\$63/wafer
6" Non-Oxidized Wafers	\$35/wafer	\$45/wafer
4" Borofloat 33 Wafers	\$25/wafer	\$35/wafer
4" Wafer Container	\$4/each	\$6/each
4" Wafer Container Lid	\$4/each	\$6/each
Cleanroom Notebook	\$12/each	\$17/each
Metal Tipped Wafer Tweezers	\$50/each	\$70/each
Plastic Tipped Wafer Tweezers	\$50/each	\$70/each
Petri Dishes	\$3/each	\$5/each
Gel pack	\$8/each	\$12/each
Microscope Slides	\$5/box	\$7/box

## HUSON IMAGING & CHARACTERIZATION LABORATORY (HICL)

Equipment	Internal Rates	External Rates
ThermoFisher Apreo SEM	\$60/hour	OR Monthly cap of \$750/month for each user
Hitachi HT-7700 TEM	\$60/hour	
AFM's (Bio and Conductive)	\$30/hour	
SEM Sputter Coater** **Doesn't included in the monthly cap	\$0.70/min	\$1.05/min
Training & Labor	\$60/hour for training and labor (does not include tool rate)	\$100/hour for training and labor (does not include tool rate)