

**BIRCK NANOTECHNOLOGY CENTER  
INTERNAL USAGE RATES**

<b>SCIFRES CLEANROOM EQUIPMENT/PROCESS RATE LISTING</b>			
SCIFRES CLEANROOM ACCESS FEE	CAP	\$285.00	PER MONTH
SCIFRES CLEANROOM TRAINING RATE	CAP	\$44.00	PER HOUR
SCIFRES CLEANROOM STAFF RATE	CAP	\$50.00	PER HOUR
MACHINE/PROCESS	CAP?	RATE	UNIT
Airco E-beam Evaporator (airco)	CAP	\$78.00	PER USE UP TO 4 HOURS
Alpha-Step IQ (alphastep_2)	CAP	\$20.00	PER USE UP TO 4 HOURS
Ammonia Anneal (ammonia_anneal)	CAP	\$52.00	PER USE UP TO 4 HOURS
Axic PECVD (axic)	CAP	\$65.00	PER USE UP TO 4 HOURS
Blue M Oven (blue_m)	CAP	\$20.00	PER USE UP TO 4 HOURS
Branson Asher (branson)	CAP	\$26.00	PER USE UP TO 4 HOURS
Canon PLA-501F Wafer Aligner (canon_pl501)	CAP	\$40.00 FIRST HOUR/ \$80.00 UP TO 4 HOURS	
CHA E-beam Evaporator (cha)	CAP	\$78.00	PER USE UP TO 4 HOURS
Cleanroom Ellipsometer (ellipsometer)	CAP	\$30.00	PER USE UP TO 4 HOURS
CMP	CAP	\$50.00	PER USE UP TO 4 HOURS
Contact Annealer (silicon_carbide_anneal)	CAP	\$25.00	PER USE UP TO 4 HOURS
Critical Point Dryer (cpd)	CAP	\$30.00	PER USE UP TO 4 HOURS
Disco DAD-2H/6 Dicing Saw (DiscoDad)	CAP	\$65.00	PER USE UP TO 4 HOURS
Figi200 ALD	CAP	\$10.00	PER USE UP TO 4 HOURS
Filmetrics (filmetrics)	CAP	\$15.00	PER USE UP TO 4 HOURS
Hall Effect MMR (mmr_probe_2261)	CAP	\$80.00	PER USE UP TO 4 HOURS
Heatpulse 610 (rtp_600)	CAP	\$26.00	PER USE UP TO 4 HOURS
JEOL JCM-5000 Table Top SEM	CAP	\$15.00	PER USE UP TO 4 HOURS
Kurt J. Lesker E-beam Evaporator (lesker_ebeam)	CAP	\$104.00	PER USE UP TO 4 HOURS
Leybold E-beam Evaporator (leybold)	CAP	\$78.00	PER USE UP TO 4 HOURS
Low Temperature Oxide Tube (lto_protemp)	CAP	\$80.00	PER USE UP TO 4 HOURS
Minipulse RTA (rtp_minipulse)	CAP	\$26.00	PER USE UP TO 4 HOURS
Nanonex NX-2000 (Nanonex_NX-2000)	CAP	\$20.00 FIRST HOUR/ \$40.00 UP TO 4 HOURS	
Nitric Oxide Anneal (nitric_oxide_anneal)	CAP	\$25.00	PER USE UP TO 4 HOURS
Olympus BX-60 (olympus_brk2261)	CAP	\$13.00	PER USE UP TO 4 HOURS
Panasonic E620 Etcher (panasonic)	CAP	\$85.00	PER HOUR
Parylene CVD (parylene_cvd_furnace)	CAP	\$45.00	PER USE UP TO 4 HOURS
Perkin Elmer 2400 Sputterer (perkin_elmer_2400)	CAP	\$78.00	PER USE UP TO 4 HOURS
Plasma Tech RIE (plasma_tech)	CAP	\$30.00 FIRST HOUR/ \$60.00 UP TO 4 HOURS	
Polysilicon/Nitride Tube (poly_nitride_protemp)	CAP	\$80.00	PER USE UP TO 4 HOURS
Probe Station I (probe_1)	CAP	\$52.00	PER USE UP TO 4 HOURS
Probe Station II (probe_2)	CAP	\$52.00	PER USE UP TO 4 HOURS
Probe Station III (probe_3)	CAP	\$52.00	PER USE UP TO 4 HOURS
Protemp Tubes_01-09	CAP	\$80.00	PER USE UP TO 4 HOURS
PVD Electron Beam Evaporator #1	CAP	\$110.00	PER USE UP TO 4 HOURS
PVD Electron Beam Evaporator #2	CAP	\$110.00	PER USE UP TO 4 HOURS
Pyrogenic Oxidation (pyrogenic_oxidation)	CAP	\$65.00	PER USE UP TO 4 HOURS
Spinner #1	CAP	\$5.00 FIRST HOUR/ \$10.00 UP TO 4 HOURS	
Spinner #2	CAP	\$5.00 FIRST HOUR/ \$10.00 UP TO 4 HOURS	
STS AOE DRIE (sts_aoe)	CAP	\$75.00	PER HOUR
STS ASE DRIE (sts_ase)	CAP	\$75.00	PER HOUR

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Suss MA 6 Mask Aligner (ma6)	CAP	\$55.00 FIRST HOUR/ \$110.00 UP TO 4 HOURS	
Suss MJB-3 Wafer Aligner (mjb3_1/mjb3_2)	CAP	\$40.00 FIRST HOUR/ \$80.00 UP TO 4 HOURS	
Suss SB6e Substrate Bonder (sb-6e_bonder)	CAP	\$55.00 FIRST HOUR/ \$110.00 UP TO 4 HOURS	
Thin Film Stress Machine (stress_machine)	CAP	\$50.00	PER HOUR
Varian E-beam Evaporator (varian_ebeam)	CAP	\$78.00	PER USE UP TO 4 HOURS
Veeco Dimension AFM (nanoman_afm)	CAP	\$35.00	PER USE UP TO 4 HOURS
Veeco Thermal Evaporator (veeco_thermal_1)	CAP	\$78.00	PER USE UP TO 4 HOURS
Vistec E-Line E-beam (vb6)	NO	\$140.00	PER HOUR
Wet/Dry Oxidation Tube (wet_dry_ox_protemp)	CAP	\$80.00	PER USE UP TO 4 HOURS
Wire Bonder (kns1478/kns4526)	CAP	\$50.00	PER HOUR
Xenon Difluoride Etch (xef2)	CAP	\$52.00	PER USE UP TO 4 HOURS

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<b>METALS FOR PURCHASE</b>	<b>CAP?</b>	<b>RATE</b>	<b>UNIT</b>
Gold	NO	\$0.71	per Nanometer (nm)
Platinum	NO	\$1.58	per Nanometer (nm)
Palladium	NO	\$0.13	per Nanometer (nm)
All Other Available Metals (Ti, Ni, SiO <sub>2</sub> , Al, Fe, Ag, Ge, Pb, Cr, Al <sub>2</sub> O <sub>3</sub> , ITO)	NO	\$0.10	per Nanometer (nm)

<b>PHOTOMASKS MANUFACTURED ON SITE</b>	<b>CAP?</b>	<b>RATE</b>	<b>UNIT</b>
PG	NO	\$260.00	PER MASK
IR	NO	\$200.00	PER MASK
RET	NO	\$55.00	PER MASK
Transparency	NO	\$20.00	PER MASK

<b>LAB ACCESS (CHARGE BASED ON HIGHEST LEVEL ENTERED)</b>			
DRY LAB ACCESS CHARGE - LEVEL ONE	NO	\$26.00	PER MONTH
SOLVENT LAB ACCESS CHARGE - LEVEL TWO	NO	\$88.00	PER MONTH
ACID LAB ACCESS CHARGE - LEVEL THREE	NO	\$133.00	PER MONTH
BSL-2 LAB ACCESS CHARGE - LEVEL FOUR	NO	\$200.00	PER MONTH
BIO-CR LAB ACCESS CHARGE	NO	\$150.00	PER MONTH

<b>ELECTRON MICROSCOPY EQUIPMENT/PROCESS RATE LISTING</b>			
<b>MACHINE/PROCESS</b>	<b>CAP?</b>	<b>RATE</b>	<b>UNIT</b>
Hitachi S-4800 Field Emission SEM (s-4800)	NO	\$25.00	PER HOUR
Titan 80-300 kV Environmental Electron Microscope (titan_80_300)	NO	\$69.00	PER HOUR
FEI Nova 200 NanoLab DualBeam TM-SEM/FIB (nova_200)	NO	\$50.00	PER HOUR
SPI Sputter Coater (SPI_sputter_coater)	NO	\$12.00	PER RUN
Electron Microscopy Staff Rate	NO	\$64.00	PER HOUR

<b>EPITAXY EQUIPMENT/PROCESS RATE LISTING</b>			
<b>MACHINE/PROCESS</b>	<b>CAP?</b>	<b>RATE</b>	<b>UNIT</b>
Electrodeposition	NO	N/A	N/C
XRD (xrd) - normal scan	NO	\$30.00	PER HOUR
XRD (xrd) - rsm scan	NO	\$180.00	PER RUN
OMVPE Aixtron (aixtron)	NO	\$150.00	PER RUN
Nitride Sputter System (nitride_sputtering)	NO	\$80.00	PER RUN
Oxide PLD System (pld)	NO	\$80.00	PER RUN
Epitaxy Staff Rate	NO	\$53.00	PER HOUR

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<b>OPTICS AND SPECTROSCOPY EQUIPMENT/PROCESS RATE LISTING</b>			
<b>MACHINE/PROCESS</b>	<b>CAP?</b>	<b>RATE</b>	<b>UNIT</b>
Spectrophotometer Lambda	NO	\$15.00	PER HOUR
Micro-sample Spectrometer	NO	\$15.00	PER HOUR
Raman Spectrometer T64000	NO	\$25.00	PER HOUR
NSOM/Luminescence Mapping	NO	\$30.00	PER HOUR
Optics Staff Rate	NO	\$66.00	PER HOUR

<b>RAITH E-BEAM EQUIPMENT/PROCESS RATE LISTING</b>			
<b>MACHINE/PROCESS</b>	<b>CAP?</b>	<b>RATE</b>	<b>UNIT</b>
Raith E-Line E-beam (raith)	NO	\$27.00	PER HOUR
Raith E-Beam Staff Rate	NO	\$41.00	PER HOUR

<b>MPCVD EQUIPMENT/PROCESS RATE LISTING</b>			
<b>MACHINE/PROCESS</b>	<b>CAP?</b>	<b>RATE</b>	<b>UNIT</b>
MPCVD (MPCVD)	NO	\$51.00	PER USE
MPCVD Staff Rate	NO	\$53.00	PER HOUR

<b>SURFACE ANALYSIS AND SPM EQUIPMENT/PROCESS RATE LISTING</b>			
<b>MACHINE/PROCESS</b>	<b>CAP?</b>	<b>RATE</b>	<b>UNIT</b>
Kratos XPS Analysis Time (xps - staff)	NO	\$70.00	PER HOUR
Kratos XPS Instrument Time (xps)	NO	\$35.00	PER HOUR
Omicron (omicron)	NO	\$40.00	PER HOUR
Dimension 3100 Scanning Probe Microscope (DI3100_brk1039)	YES	\$30.00	PER HOUR
Dimension 3100 Scanning Probe Staff (DI3100_brk1039 - staff)	NO	\$13.00	PER HOUR
Asylum Bio AFM (Asylum_MFP_3D-Bio)	YES	\$60.00	PER HOUR
Asylum Bio AFM Staff (Asylum_MFP_3D-Bio - staff)	NO	\$7.00	PER HOUR
AFM Staff Rate for Training/Analysis	NO	\$48.00	PER HOUR

<b>LASER DOPPLER VIBROMETRY EQUIPMENT/PROCESS RATE LISTING</b>			
<b>MACHINE/PROCESS</b>	<b>CAP?</b>	<b>RATE</b>	<b>UNIT</b>
Micro System Analyzer (polytec_laser_vibrometer)	YES	\$6.00	PER HOUR
Vaccum Chamber (Suss_PLV50_ProbeStation)	YES	\$13.00	PER HOUR
LDV Staff Rate	NO	\$36.00	PER HOUR

Rates current as of January 3rd, 2012.

For more information or questions, please contact:

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