

BIRCK NANOTECHNOLOGY SCIFRES CLEANROOM SMALL BUSINESS RATES

Scifres Nanotechnology Cleanroom Rate Schedule:	CAP?	Billable Unit	User Charge
SERVICE CHARGES:			
Cleanroom Daily Access Fee	8 Days Monthly	Per Day	\$ 70.00
Training Time	No	Per Hour	\$ 98.00
Engineering Staff Time	No	Per Hour	\$ 125.00
Process Scientist Staff Time	No	Per Hour	\$ 131.00
EQUIPMENT: Metallization			
Airco E-Beam Evaporator	No	Per 4 Hour Use	\$ 313.00
Cha E-Beam Evaporator	No	Per 4 Hour Use	\$ 313.00
Leybold E-Beam Evaporator	No	Per 4 Hour Use	\$ 313.00
Perkin Elmer 2400 Sputterer	No	Per 4 Hour Use	\$ 313.00
Varian E-Beam Evaporator	No	Per 4 Hour Use	\$ 313.00
PVD Electron Beam Evaporator #1	No	Per 2 Hour Use	\$ 313.00
PVD Electron Beam Evaporator #2	No	Per 4 Hour Use	\$ 313.00
Veeco Thermal Evaporator	No	Per 4 Hour Use	\$ 313.00
Kurt J Lesker E-Beam	No	Per 3 Hour Use	\$ 313.00
PVD Sputtering System - Metals/Dielectrics	No	Per 2 Hour Use	\$ 187.00
PVD Sputtering System - Magnets	No	Per 2 Hour Use	\$ 187.00
Vistec E-Beam (VB6)	No	Per Hour	\$ 450.00
EQUIPMENT: Testing			
Veeco Dimension AFM	No	Per 1 Hour Use	\$ 42.00
Dimension 3100 AFM	No	Per 1 Hour Use	\$ 46.00
Alpha-Step IQ	No	Per Half-Hour Use	\$ 14.00
Filmetrics	No	Per Half-Hour Use	\$ 27.00
Olympus BX-60 Microscope	No	Per Half-Hour Use	\$ 11.00
Ellipsometer	No	Per Half-Hour Use	\$ 21.00
JEOL JCM-5000 Table Top SEM	No	Per Half-Hour Use	\$ 47.00
MMR Probe Station #2	No	Per 2 Hour Use	\$ 159.00
EQUIPMENT: Furnaces			
Blue M Oven	No	Per 1 Hour Use	\$ 133.00
Ammonia (NH3) Anneal	No	Per 1 Hour Use	\$ 44.00
Nitric Oxide Anneal	No	Per 1 Hour Use	\$ 30.00
Silicon Carbide Anneal	No	Per 1 Hour Use	\$ 30.00
Pyrogenic Oxydation	No	Per 4 Hour Use	\$ 215.00
RTA Heatpulse 610	No	Per 1 Hour Use	\$ 33.00
RTA MiniPulse	No	Per 1 Hour Use	\$ 33.00
ProTemp Tube_01	No	Per 1 Hour Use	\$ 91.00
ProTemp Tube_02	No	Per 1 Hour Use	\$ 91.00
ProTemp Tube_03	No	Per 1 Hour Use	\$ 91.00
ProTemp Tube_04	No	Per 1 Hour Use	\$ 91.00
ProTemp Tube_05	No	Per 1 Hour Use	\$ 91.00
ProTemp Tube_06	No	Per 1 Hour Use	\$ 91.00
ProTemp Tube_07	No	Per 1 Hour Use	\$ 91.00
ProTemp Tube_08	No	Per 1 Hour Use	\$ 91.00
ProTemp Tube_09	No	Per 1 Hour Use	\$ 91.00
EQUIPMENT: Plasma (Etch)			
Branson	No	Per 1 Hour Use	\$ 24.00
Axic CVD	No	Per 2 Hour Use	\$ 131.00
Plasma Tech RIE	No	Per Half-Hour Use	\$ 36.00
ASE Etcher	No	Per 1 Hour Use	\$ 93.00

Scifres Nanotechnology Cleanroom Rate Schedule:	CAP?	Billable Unit	User Charge
EQUIPMENT: Photolithography			
MJB-1 Wafer Aligner	No	Per Half-Hour Use	\$ 22.00
MJB-2 Wafer Aligner	No	Per Half-Hour Use	\$ 22.00
Suss MA-6 Mask Aligner	No	Per Half-Hour Use	\$ 24.00
Spinner #1	No	Per Half-Hour Use	\$ 11.00
Spinner #2	No	Per Half-Hour Use	\$ 11.00
Nanonex NX-2000 Nanoimprinter	No	Per 1 Hour Use	\$ 67.00
Suss SB6e Substrate Bonder	No	Per 1 Hour Use	\$ 84.00
MA-24 Mask Aligner	No	Per Half-Hour Use	\$ 33.00
EQUIPMENT: Electrical Characterization			
MMIIProbe 3	No	Per 2 Hour Use	\$ 142.00
MMIIProbe 2	No	Per 2 Hour Use	\$ 142.00
MMIIProbe 1	No	Per 2 Hour Use	\$ 142.00
Jandel 4-point probe system	No	Per Half-Hour Use	\$ 8.00
EQUIPMENT: Photomasks			
PG	No	Per Mask	\$ 421.00
IR	No	Per Mask	\$ 324.00
RET	No	Per Mask	\$ 90.00
Transparency	No	Per Mask	\$ 33.00
EQUIPMENT: Miscellaneous			
Xef Etcher	No	Per 1 Hour Use	\$ 57.00
Parylene CVD	No	Per 4 Hour Use	\$ 150.00
Fiji200 ALD	No	Per Use	\$ 110.00
DiscoDad Dicing Saw	No	Per 1 Hour Use	\$ 73.00
Critical Point Driver (CPD)	No	Per 1 Hour Use	\$ 36.00
CMP	No	Per 1 Hour Use	\$ 57.00
Disco Dad Dicing Saw #2	No	Per 1 Hour Use	\$ 88.00
Easy Tube 3000 ALD	No	Per 2 Hour Use	\$ 76.00
Jipelec RTA	No	Per 1 Hour Use	\$ 48.00
Heidleburg	No	Per 2 Hour Use	\$ 429.00
Bruker Optical Profileometer	No	Per Half-Hour Use	\$ 24.00
EQUIPMENT: Bonders & STS			
STS_AOE	No	Per 1 Hour Use	\$ 93.00
STS_ASE	No	Per 1 Hour Use	\$ 93.00
Panasonic	No	Per Hour	\$ 281.00
Stress Machine	No	Per Half-Hour Use	\$ 113.00
West Bond	No	Per 1 Hour Use	\$ 165.00
Wire Bonder #1 (KNS)	No	Per 1 Hour Use	\$ 31.00
Wire Bonder #2 (KNS)	No	Per 1 Hour Use	\$ 31.00
JFP Wire Bonder	No	Per 1 Hour Use	\$ 31.00
KNS4526 Ribbon Bonder	No	Per 1 Hour Use	\$ 31.00
Small Wire Bonding Package	No	Per Package	\$ 16.00
Large Wire Bonding Package	No	Per Package	\$ 39.00
METALS:			
Gold	No	Per Nanometer	\$ 1.09
Platinum	No	Per Nanometer	\$ 2.43
Palladium	No	Per Nanometer	\$ 0.20
Scandium	No	Per Nanometer	\$ 4.77
All Other Metals	No	Per Nanometer	\$ 0.15

*\$13k Annual cap refers to the \$13,000 per user, per account CAP on a fiscal year basis

**8 Days Monthly cap refers to a max of 8 days paid per month in access fees per user, per account

BIRCK NANOTECHNOLOGY OUTSIDE LABS SMALL BUSINESS RATES

LAB ACCESS (CHARGE BASED ON HIGHEST LEVEL ENTERED)

MACHINE/PROCESS	CAP?	UNIT	RATE
DRY LAB ACCESS CHARGE - LEVEL ONE	8 days Monthly	Per Day	\$22.00
SOLVENT LAB ACCESS CHARGE - LEVEL TWO	8 days Monthly	Per Day	\$69.00
ACID LAB ACCESS CHARGE - LEVEL THREE	8 days Monthly	Per Day	\$100.00

*Cap is per user, per project per fiscal year

BIOLOGY LABS RATE LISTING

MACHINE/PROCESS	CAP?	UNIT	RATE
BioLabs Access	8 Days Monthly	Per Day	\$48.00
Zetasizer	No	Per Hour	\$7.00
Olympus FV1000 Confocal Microscope	No	Per Hour	\$39.00
Cell Culture BioHood Surcharge	No	Per Month	\$39.00
Special Projects Hourly Staff Rate	No	Per Hour	\$85.00

ELECTRON MICROSCOPY EQUIPMENT/PROCESS RATE LISTING

MACHINE/PROCESS	CAP?	UNIT	RATE
Hitachi S-4800 Field Emission SEM (s-4800)	No	Per Hour	\$48.00
Titan 80-300 kV Environmental Electron Microscope (titan_80_300)	No	Per Hour	\$170.00
FEI Nova 200 NanoLab DualBeam TM-SEM/FIB (nova_200)	No	Per Hour	\$107.00
SPI Sputter Coater (SPI_sputter_coater)	No	Per Run	\$41.00
Electron Microscopy Staff Rate	No	Per Hour	\$56.00

ATOMIC FORCE MICROSCOPY RATE LISTING

MACHINE/PROCESS	CAP?	UNIT	RATE
Nanotech AFM 1	No	Per Hour	\$39.00
Nanotech AFM 2	No	Per Hour	\$39.00
Agilent 5500	No	Per Hour	\$39.00
Asylum MFP3D Bio AFM	No	Per Hour	\$68.00
Asylum Cypher	No	Per Hour	\$68.00

*Cap is per user, per project per fiscal year

EPITAXY EQUIPMENT/PROCESS RATE LISTING

MACHINE/PROCESS	CAP?	UNIT	RATE
Electrodeposition	No	N/C	N/A
XRD (xrd) - normal scan	No	Per Hour	\$85.00
XRD (xrd) - rsm scan	No	Per Run	\$510.00
OMVPE Aixtron (aixtron)	No	Per Run	\$282.00
Nitride Sputter System (nitride_sputtering)	No	Per Run	\$138.00
Oxide PLD System (pld)	No	Per Run	\$136.00
Epitaxy Staff Rate	No	Per Hour	\$82.00

OPTICS AND SPECTROSCOPY EQUIPMENT/PROCESS RATE LISTING

MACHINE/PROCESS	CAP?	UNIT	RATE
Spectrophotometer Lambda	No	Per Hour	\$105.00
Micro-sample Spectrometer	No	Per Hour	\$108.00
Raman Spectrometer T64000	No	Per Hour	\$48.00
NSOM/Luminescence Mapping	No	Per Run	\$122.00
V-VASE Spectroscopic Ellipsometer	No	Per Hour	\$25.00
Optics Staff Rate	No	Per Hour	\$102.00

RAITH E-BEAM EQUIPMENT/PROCESS RATE LISTING			
MACHINE/PROCESS	CAP?	UNIT	RATE
Raith E-Line E-beam (raith)	No	Per Hour	\$61.00
Raith E-Beam Staff Rate	No	Per Hour	\$74.00
MPCVD EQUIPMENT/PROCESS RATE LISTING			
MACHINE/PROCESS	CAP?	UNIT	RATE
MPCVD (MPCVD)	No	Per Use	\$96.00
MPCVD Staff Rate	No	Per Hour	\$82.00
SURFACE ANALYSIS AND SPM EQUIPMENT/PROCESS RATE LISTING			
MACHINE/PROCESS	CAP?	UNIT	RATE
Kratos XPS Analysis Time (xps - staff)	No	Per Hour	\$108.00
Kratos XPS Instrument Time (xps)	No	Per Hour	\$96.00
Glovebox	No	Per Hour	\$39.00
Omicron (omicron)	No	Per Run	\$185.00
LASER DOPPLER VIBROMETRY EQUIPMENT/PROCESS RATE LISTING			
MACHINE/PROCESS	CAP?	UNIT	RATE
Micro System Analyzer (polytec_laser_vibrometer)	No	Per Hour	\$10.00
Vaccum Chamber (Suss_PLV50_ProbeStation)	No	Per Hour	\$21.00
LDV Staff Rate	No	Per Hour	\$56.00
*Cap is per user, per project per fiscal year			
FEMTOSECOND LASER & RAMAN SPECTROSCOPY RATE LISTING			
MACHINE/PROCESS	CAP?	UNIT	RATE
Femtosecond Laser	No	Per Hour	\$47.00
Raman Spectrometer	No	Per Hour	\$42.00
Training/Staff Time	No	Per Hour	\$57.00
THERMOELECTRIC CHARACTERIZATION RATE LISTING			
MACHINE/PROCESS	CAP?	UNIT	RATE
Z-Meter (z_meter)	No	Per Hour	\$16.00
Bulk (TE_bulk)	No	Per Hour	\$16.00
Thin Film (TE_ThinFilm)	No	Per Hour	\$16.00
Training/Staff Time	No	Per Hour	\$48.00

Rates current as of July 1, 2013

For more information or questions, please contact:

Natosha Whisler
 Recharge Center
 Birck Nanotechnology Center
 Phone: (765) 494-1539
 Email: Nwhisle@purdue.edu