

MU Materials Science and Engineering Institute

User facility rates

Materials Characterization Equipment		
System	User Rate (\$/hr)	Training Rate (\$/hr)
Atomic Force Microscope (AFM)	22	78
Optical Profilometer	11	67
Bruker Ti Premier Nanoindenter	19	76
Agilent G200 Nanoindenter	12	76
Raman InVia Spectroscope	25	82
UV-Vis Spectrometer	10	66
FTIR Spectrometer	15	72
Variable Angle Spectroscopic Ellipsometer	10	67
Contact Angle Goniometer	10	59
Keyence Digital Microscope	4	60
Nanoscribe Quantum Shape X (3D printer)	25	82
Bruker IR Microscope	17	74
X-Ray Diffractometer	25	81
Thermogravimetric Analysis (TGA/DSC)	21	78
Thermal Conductivity Tester	7	64
Probe Station/Keithley 4200 SCS	15	70

Device fabrication equipment

Class 1000 Clean Room		
System	User Rate (\$/hr)	Training Rate (\$/hr)
Entrance Fee*	24	-
Photolithography	81	57
Wet Chemistry	41	57
Mask Aligner	18	57
Hot Plate/Oven	16	57
Spin Coater	16	57
*Entrance fee is charged once per day per user.		

Materials Synthesis and Processing		
System	User Rate (\$/hr)	Training Rate (\$/hr)
Rapid Thermal Annealing (RTA)	22	79
Oxygen Plasma System	5	61

Thin Film Deposition Systems

Sputter Deposition

Material	Thickness (nm)	Cost per Run (\$)
Au	100	139
TiO ₂	100	99
Pt	100	146
Ag	100	111
Ge	100	99
Cr	100	85
Ti	100	85
Ti	5	84
Pd	100	150
Al	100	115
ITO	100	99
DLC	100	89
Au NP	1	84

E-Beam Deposition

Material	Thickness (nm)	Cost per Run (\$)
Au	100	140
Au	10	85
Ag	100	84
Ti	100	82
Ti	10	80
SiO ₂	100	81
Al ₂ O ₃	10	81

Thermal Evaporator

Material	Thickness (nm)	Cost per Run (\$)
Au	100	136
Ag	100	91
Cr	100	82
Al	100	77

Atomic Layer Deposition

Material	Thickness (nm)	Cost per Run (\$)
SiO ₂	10	81
Al ₂ O ₃	10	83
TiO ₂	10	83