Characterization Facility, Nanoscale Research Facility, IIT Delhi
(Users Charges)

S. No.	Facility	Details of Measurement	Sample Type	Faculty In-charge	Charges per Sample (Rs.)		
					IITD	External Academic (Extra GST 18%) **	Industry (Extra GST 18%) **
1.	Tomography Optical Microscope/3D Optical Profilometer	Optical type	Thin sample, Film	Prof. Joby Joseph	200	600	1800
2.	Electrochemical Quartz Crystal Microbalance	Electrochemical	Sample (working electrode)	Prof. S. Basu	200	600	1200
3.	Fuel Cell Test Station	Electrochemical (low temperature)	Membrane electrode assembly		300	840	1800
4.	HPLC	Product analysis	Sample (liquid)		500	1200	3000
5.	Scanning Electrochemical Microscope (SECM)	Electrochemical	Film on conducting glass slide (working electrode)		300	840	1800
6.	Photo Electrochemical Workstation	Photoelectrochemical	Sample/Film with contact (working electrode)		500	1200	3000
7.	Semiconductor Characterization System and DC Probe Station (RT*)	I-V, C-V at Room Temperature (*charges per hour*)	Sample with contact metal pads	Prof. R. Singh	200	840	1200
		I-V-T, C-V-T (*charges per hour*)*					
8.	AGM	M-H measurement at Room Temperature for field up to 0.7 T	Packed powder/ Film	Prof. N. Khare	600	1200	4800
9.	DLS	Size distribution	Liquid (aqueous or non-aqueous)		200	600	1800
10.	GCMS	Composition of organic components	Non-aqueous liquid		300	840	1800
11.	XRD	XRD pattern (one scan) (20 to 80 degree scan)	Powder/Bulk		200	600	3000
		XRD pattern (one scan) (20 to 80 degree scan)	Film		200	600	3000
12.	SEM (EDAX)	Element analysis	Film/Bulk		200	600	2400
		Element scan	Film/Bulk		500	1800	4800
13.	Tabletop SEM (without coating)	Surface morphology	Film/Bulk pallet		200	600	2400
14.	Stylus Profilometer	Thickness measurement	Film with a step formed in the coating	Prof. Bhaskar Mitra	200	600	1800
15.	Thin Film Stress Measurement System	Optical type	Wafer/Film on wafer		300	840	1800

*Measurement Time: Minimum Four Hours (Temperature variation 80 K to 300 K)

**To be paid extra GST 18% for External Academic and Industry user.

16.	Optical Surface Profilometer	Optical type	Film with a step formed in the coating		200	840	1800
17.	UV-VIS	Total reflectance Wavelength range: 250-1100nm	Film	Dr. Vamsi Komarala	200	600	1800
		250-2500nm	Film		300	840	2400
18.	FTIR	ATR and FTIR Range: 400 - 4000 wave numbers	Powder, Polymer, KBR pallet	Prof. Prashant Mishra	300	840	2400
19.	Photoluminescence (PL)	Excitation: 325nm Scan range: 300nm - 800nm	Film	Prof. J. P. Singh	300	840	3000
20.	Raman	$1cm^{-1}$ resolution Excitation: 325nm and 785nm	Bulk pallet/Film		300	840	3000
21.	AFM	Surface morphology	Film		300	600	1200
		Scan mode: (MFM/KPFM/ Conducting)			600	1800	3000
22.	Ellipsometer	Characterization of film thickness, optical constants	Film	Prof. Anuj Dhawan	300	840	1800

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Fabrication Facility, Nanoscale Research Facility, IIT Delhi
(Users Charges)

Clean Room Entry Charges: Rs. 100/- per person per entry(IIT Delhi)
Rs. 500/- per person per entry(External Academics)
Rs. 1,000/- per person per entry (Industry)

S. No.	Facility	Details of Measurement	Sample Type	Faculty In-charge	Charges per hour (Rs.)			Minimum Time (hrs)	Total Charges Per Slot Booking (Rs.)
					IITD	External Academic (Extra GST 18%) *	Industry (Extra GST18%) *		
1.	Maskless Lithography System	Fabrication of patterns on coated photoresist	Thin substrate, Wafer, Soft mask drawing	Dr. Rajendra Singh	300	600	1800	2	600
2.	E-beam Lithography System	Fabrication of patterns on coated electron resist	Thin substrate		500	2400	7200	4	2000
3.	Plasma Asher	Etching of photoresist, Surface activation	Photoresist coated substrate, Wafer	Prof. Pankaj Srivastava/ Prof. R. Singh	300	600	1200	1	300
4.	Thermal Evaporation	Deposition material: Cr, Al, Ag, Au	Thin substrate, Wafer	Prof. Bhaskar Mitra	300	900	1800	3	900
					For Au: Rs 1200/- per 50 nm				
5.	Thermal (glancing angle deposition)	Substrate at a variable glancing angle for 3D deposition	Thin substrate, Wafer	Prof. J. P. Singh	500	1200	2400	3	1500
6.	E-Beam Evaporator	Deposition material: Ti, Cr, Mo	Thin substrate, Wafer	Prof. Neeraj Khare	200	900	1800	5	1000
7.	Sputtering Deposition	Deposition material: Cr, Al, Ag, Au, Pt, Mo, Zn	Thin substrate, Wafer	Prof. Vamsi Komarala	300	840	2400	3	900
					For Au: Rs 1200/- per 50 nm For Pt: Rs 1800/- per 50 nm				
		Deposition material: SiO_2, ITO	Thin substrate, Wafer		300	840	2400	3	900
8.	Dicing Saw	Wafer dicing into small size samples	Wafer, Thin substrate	Prof. Madhusudan Singh	200	600	2400	1	200
9.	Wire Bonder	Wire bonding interconnections	Substrate with contact metal	Prof. Samaresh Das	500	1200	2400	1	500
10.	Mask Aligner	Fabrication of patterns on coated photoresist	Wafer, Hard mask		300	840	2400	2	600
11.	Wet Bench	Sample cleaning, Wet chemical etching, Chemical surface passivation	Thin substrate, Wafer	Prof. Prashant Mishra	200	840	1800	1	200
12.	Dual Wavelength UV Laser Lloyd's Mirror Interference Lithography	Fabrication of linear grating	Photoresist coated thin substrate	Prof. Joby Joseph	200	600	1200	1	200

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