Project Title: Characterization of Materials and Devices

Lab: F 119, Department of Physics, IIT Kharagpur

Proposed rate/ charges

Table1: Details specification of all instruments

Name of the Instrument	Working Condition	Analysis	Samples Required	Charges (Rupees)	
				Academic (Govt./State funded)	PFTIs, Industry
XRD	5^0-120^0 (2θ value)	Phase confirmation	Powder sample	1000 for 4 samples	2000
BET	Degassing 150^0C to 100^0C	Surface area, porosity measurement	Powder sample	1000 for 2 samples	2000
UV-Visible spectra	200-1100 nm wavelength	Band gap measurement	Powder, liquid	1000 for 4 samples	2000
FTIR	400-4000 cm^{-1}	Chemical functional group detection	Powder	1000 for 4 samples	2000
Zeta Potential	-100 to 100 mV	Surface Charge	Powder, Liquid	1000 for 4 samples	2000
Dynamic light Scattering	10-500 nm	Particle size	Powder, Liquid	1000 for 4 samples	2000
Electrochemical Measurement		(For Battery, Supercapacitor, HER, OER and Sensing measurements)			
Cyclic Voltammetry	0.5 mV/s-500 mV/s	Voltage window optimization	Drop casted on conducting current collector/Cell	2000	4000

Charge – discharge	0.1 A/g to 20 A/g	Capacity measurement	Drop casted on conducting current collector/Cell	2000	4000
EIS	1 mHz to 100MHz	Conductivity measurement, ESR	Drop casted on conducting current collector/Cell	1500	3000
Chrono-amperometry	-10 mA to 10 mA	Current vs time measurement	Drop casted on conducting current collector	1000	2000
Chrono-potentiometry	1V to -1V	Voltage vs time measurement	Drop casted on conducting current collector	1000	2000