	INDIAN INSTITUTE OF TECHNOLOGY BOMBAY **MATERIALS MANAGEMENT DIVISION** **Powai, Mumbai 400076.**

RFx: 6100000481

Detailed Technical Specifications for Modular Potentiostat / Galvanostat (PGSTAT) Electrochemical Workstation

We intend to purchase a single channel PGSTAT (one quantity-1 QTY) along with some accessories that would be mainly used for electrodeposition and corrosion investigation of various metals and alloys with a capability of performing various electrochemical studies.

Following are the specifications for various components of the system:

General Specifications:

Potentiostat cum Galvanostat (with the following specifications**)**		QTY:01
No. of Channels	1 (Single Channel)	
Potential range	± 10 V or better	
Compliance voltage	± 30 V or better at complete ± 2 A (adjustable configurations will not be allowed)	
Maximum Current	± 2 A or better at maximum voltage	
Current Ranges	10 nA to 1 A in different ranges	
Resolution of measured potential	0.3 µV or better	
Resolution of measured current	0.0003% of current range or better (default hardware accuracy without any additional boosters)	
Maximum scan rate	1000 V/s with 15 mV Step	
Input impedance of electrometer	> 1TOhm // 8 pF	
Potentiostat Gain bandwidth	1 MHz or better	
Bandwidth of electrometer	> 4 MHz or better	
Potentiostat rise fall time	< 250 nS or better	
Input Bias current	< 1 pA or better	
A/D Converter	Three channel, 16 bit	
External input/output signals	at least 2	
Digital I/O lines	at least 48	
IR Compensation	Current Interrupt, positive feedback & dynamic	
Resolution	0.05% or better	
Frequency range in combination with PSTAT / GSTAT	1 MHz - 10 µHz	
Frequency range in combination of waveform generator	30 MHz - 10 µHz	
Frequency Resolution	0.005% or better	

Software	A comprehensive EIS analysis software package that works on fully Windows 10 and beyond based with the capability to acquire data, plot, view and analyze data at least for the following: 1. Fundamental Electrochemistry – OCV, CV, LSV including Chrono-methods 2. Pulse software 3. Electrochemical Impedance Spectroscopy Technique 4. Equivalent EIS fitting circuit software 5. Analysis tools for Corrosion Rp and Tafel Fit 6. Linear Polarisation 7. Nyquist plots, Bode plots, Dielectric, Mott-Schottky, etc. Following techniques should be covered 1. Electrochemical Frequency Modulation Technique 2. Electrochemical Noise 3. Electrochemical impedance spectroscopy with real-time fit & simulation 4. Linear polarization with automated Tafel Slope Analysis	
pH/pX and temperature measurement module	measurements of pH or pX values and temperature during electrochemical experiments through a combinedsensor	QTY:01
Current Booster (20A) Maximum Current with Booster	$\pm$ 20 A (maximum compliance voltage along with booster is $\pm$ 20V) –Must be compatible with the potentiostat/galvanostat	QTY:01
Electrodes for pH measurements	Combined pH electrode for measurements in sample volumes of >50 micro-L –Must be compatible with the potentiostat/galvanostat	QTY:01
Pt1000 temperature sensor	Temperature sensor made of stainless steel–Must be compatible with the potentiostat/galvanostat	QTY:01

Guarantee /Warranty: 12 months from the date of installation, and technical and accessories support for at least 10 years.