


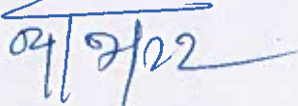
Corrigendum -1

Date: 04.07.2022

Tender reference no. RGIPT/JAIS/CRF/2022-23/01 dated 17.06.2022

Subject: Modification in the Technical Specifications for the Procurement of Multichannel Electrochemical Workstation for corrosion lab

It is being notified that a modifications have been done in the technical specification in published tender for the procurement of Multichannel Electrochemical Workstation. Therefore, a corrigendum is being published for the same. Revised technical specification are attached with the Corrigendum.


Dr. U. Ojha 

(Chairman, CRF Purchase Committee)

MULTI CHANNEL ELECTROCHEMICAL WORKSTATION

Modified technical Specification for The Procurement of Multichannel Electrochemical Workstation for Corrosion lab

Tender reference no. RGIPT/JAIS/CRF/2022-23/01

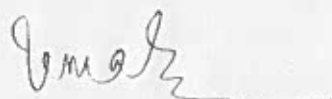
MULTICHANNEL ELECTROCHEMICAL WORKSTATION SYSTEM: Qt. 2 Channel – Expandable up to total 10.

Sr No.	Description	Bidders Specification	Compliance	Deviation
1	No of Channels: 2 (Possibility to upgrade to upto 10 channels in future).			
2	Independent EIS Configuration: Each channel should have its own independent EIS option so that if EIS is not functioning on one channel it will not stop the functioning for the remaining channels.			
3	Compliance voltage: ± 18 V or better at ± 380 mA current in complete range – Adjustable compliance voltage configurations will not be considered.			
4	Maximum Output Current: ± 380 mA or better at 18 V.			
5	Current boosting ± 10 A option: Each channel expandable anytime to ± 10 A measured current with unchanging current accuracy of 0.0003% or better as well as compliance voltage of ± 18 V – Qt. 1			
6	Output Voltage Range: ± 10 V or better.			
7	Current Ranges: ± 10 nA to current range 100 mA in multiple ranges.			
8	Measured current accuracy: 0.0003% at entire current range. Must be a default hardware configuration without any additional external accessories or current boosters.			
9	Maximum Scan Rate: 1000 V/s with 20 mV steps			
10	Measured Potential Resolution: 5 μ V or better.			
11	Potentiostat Rise/fall Time: < 350 ns or lower.			
12	Interface: USB interface for connection with PC or better.			
13	A single Master USB control for all channels.			

14	Multiple USB Connectivity: Electrochemical workstation should also have 3 or more channels such that each could be independently controlled via dedicated computer station.			
15	Input bias current: < 1 pA			
16	Bandwidth of electrometer: > 1 MHz or better.			
17	Input impedance of electrometer: > 90 GOhm // 8 pF			
18	Modular Multichannel Configuration: Each channel should have plug and play type expandability options for following:			
19	Electrochemical Impedance Measurements – Qt. 1			
20	High Current Amplification Upto $\pm 10A$ – Qt. 1			
21	Multiplexing options to conduct experiments upto 64 independent cells upgradation.			
22	The systems should be compatible with following for anytime upgradation using 'single software' application:			
23	Electro-catalysis ORR measurements with Bi-pot based RRDE set-up upgradation.			
24	Photo-electrochemical Water-Splitting for HER, OER and Carbon Dioxide Reduction tests upgradation.			
25	Spectro-electrochemistry with one-software control of integration time upgradation.			
26	EIS Add-on: Qt. 1 Hardware and software for EIS measurements should be available in potentiostatic and galvanostatic control, over frequency range of 10 μ Hz to 1 MHz. It should be possible to perform EIS measurements over entire frequency range from 10 μ Hz to 1 MHz upto ± 380 mA currents. The frequency range in combination with a commonly available external waveform generator should be 10 μ Hz - 10 MHz. The frequency range in combination with potentiostat for EIS measurements should be available in potentiostatic and galvanostatic control, over frequency range of 10 μ Hz to 1 MHz. It should be possible to perform EIS measurements over entire frequency range from 10 μ Hz to 1 MHz upto ± 380 mA currents. The frequency range in			

	<p>combination with a commonly available external waveform generator should be 10 μHz - 10 MHz. The frequency range in combination with potentiostat galvanostat should be 10 μHz - 1 MHz. The applied frequency resolution should be 0.003% or better.</p> <p>Measured EIS Data presentation: Real-time fit and simulation analysis as well as 'live' data plotting option for the simulation plot must be available as default software protocol. Also real-time measurement plots needed for – Lissajous curve, Nyquist, Bode, Admittance, Dielectric & Mott-Schottky. The fit and simulation software should include basic options such as find circle, element subtraction and an equivalent circuit library with all the modern EIS equivalent circuit models (Randle's, transmission line, etc.). Minimum visible plots in real time should be 8 or more.</p>			
27	<p>High Current Booster Option for Each Channel: Qt. 1</p> <p>The booster should not use any additional slots and should have capability to be added to any of the two existing channels. At present, the current booster option is required on any one of the two channels to boost the measurement as well as applied current capability of the channel upto \pm 10A. A compliance voltage of \pm 18V or better with booster is preferred. Measurement current accuracy of 0.0003% with booster is highly required for accurate high precision measurements as well as optimizing parameters for electrodeposition research.</p>			
28	<p>Corrosion cell set up: Qt. 2</p> <p>Glass Corrosion Cell for Flat Samples 1000ml Glass reservoir, Saturated calomel reference electrode, graphite counter 6mm dia, lugging tube, Sample Holder, Screw type, Sample Holder Clip type.</p>			
29	<p>Electrochemical Software for Multichannel Workstation:</p> <p>The Software to be provided with the Potentiostat / Galvanostat should be comprehensive, fully windows based with three-dimensional view of graphics and</p>			

	<p>analysis software. Software should record current, voltage and time for cyclic and linear sweep voltammetric measurement. It should be possible to record current, voltage and time data in tabular format for each measuring point in voltammogram. Software should be capable of supporting a wide variety of electrochemical techniques as mentioned below.</p> <p>Electrochemical Frequency Modulation Technique. Cyclic & Linear Sweep Voltammetry – HER, OER, Kotecky –Levich based default protocols. Linear Polarization – Fully automated Tafel Slope analysis. Differential Pulse, Sampled DC & Square Wave Voltammetry. Chrono-amperometry, chrono-coulometry and chrono-potentiometry ($\Delta t > 1$ ms). It should have facility to display up to 10 or more plots simultaneously. Software should have facility to record additional signal viz EQCM, bi-potentiostat etc. Import/export ASCII, Ready-to-use Vis & Generic interface for Net applications should be included.</p>			
30	<p>Branded Desktop CPU Intel Core i7, RAM 8 GB, HDD 500 GB, GPU Direct X 9.0c compliant display adapter with 1GB RAM, LED Monitor, 101 Keys Keyboard, Optical Mouse, 3 USB Ports.</p>			
31	<p>Branded colour ink Tank Printer with Scanner & Photocopier</p>			
32	<p>Branded 3 KVA Online UPS with 30 minutes back up.</p>			



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