

No: NFSU/HQ/38(5)/2023-PUR/CPPP14/3952

Date: 23/10/2023

Addendum

With reference to the tender advertisement which was published on 20th October, 2023 on CPPP Portal (ID: 2023_NFSU_777563_1) and on NFSU's Website (i.e. www.nfsu.ac.in) by National Forensic Sciences University, the following addendum is issued.

| Sr. No. | Clause Reference | Existing Specifications |
|---------|--|---|
| 1 | Technical Specifications (Technical Compliance Report) Page No: 17 | Electrochemical Workstation should be able to perform following techniques <ul style="list-style-type: none"> • Cyclic Voltammetry (CV) • Galvanostatic Charge Discharge (GCD) • Electrochemical impedance spectroscopy (EIS) • Linear Sweep Voltammetry (LSV) (LSV includes Isc, Voc, Pwr Max (W), Pwr Max(V), FF) • Staircase Voltammetry (SCV) • Tafel Plot (TAFEL) • Chrono Amperometry (CA) • Chrono Coulometry (CC) |
| 2 | Addendum to Technical Specifications (Technical Compliance Report) Page No: 17 | Electrochemical Workstation should be able to perform following techniques <ul style="list-style-type: none"> • Cyclic Voltammetry (CV) • Galvanostatic Charge Discharge (GCD) • Electrochemical impedance spectroscopy (EIS) • Linear Sweep Voltammetry (LSV) (LSV includes Isc, Voc, Pwr Max (W), Pwr Max(V), FF) • Staircase Voltammetry (SCV) • Tafel Plot (TAFEL) • Chrono Amperometry (CA) • Chrono Coulometry (CC) • Differential Pulse Voltammetry (DPV) • Normal Pulse Voltammetry (NPV) • Differential Normal pulse Voltametry (DPNV) • Square Wave Voltammetry (SWV) • AC Voltammetry (ACV) • Second Harmonic AC Voltammetry (SHACV) • Amperometric i-t Curve (i-t) • Fourier Transform AC Voltammeter (FTAC) |

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Tripura Campus

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Bhopal Campus

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NFSU Academy:- Pune, Kamrup, Manipur

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| | | <ul style="list-style-type: none"> Differential Pulse Amperometry (DPA) Double Differential Pulse, Amperometry (DDPA) Triple Pulse Amperometry (TPA) Integrated Pulse Amperometry Detection (IAPD) Bulk Electrolysis with Coulometry (BE) Hydrodynamic Modulation Voltammetry (HVM) Sweep-Step Functions (SSF) Multi-Potential Steps (STEP) AC Impedance (IMP) – 10uHz to 1MHz Impedance – Time (IMPT), Impedance – Potential (IMPE) Chrono Potentiometry (CP) Chronopotentiometry with Current Ramp (CPCR) Multi-Current Steps (ISTEP) Potentiometric Stripping Analysis (PSA) Open Circuit Potential – Time (OCPT) Galvanostat, RDE control (0-10V output) |
| | | <ul style="list-style-type: none"> Should be able to provide the corresponding Polarographic and stripping modes for most Voltammetry techniques. |
| | | <ul style="list-style-type: none"> Hardware Specification: Potentiostat / Galvanostat, 4 or 5 -electrode configuration Number of Channels: 01 and should have the facility to upgrade more channels in same chassis. Scan rate: 1-10 microV/s to 10000 V/s or better Measured current/potential Resolution: 0.05 to 0.0015% Applied potential resolution: 1-150 microV or better IMP amplitude range: 0.00001 to 0.7V RMS or better (for impedance 10-1000 ohm) Potentiostat rise time: 400ns to 1µs or better Current range +/- 10 nA - 250 mA or better Potentiostat bandwidth: 1MHz or better Compliance Voltage: ±15 to ±20V or better Maximum potential: ±10V, Input bias current: less than or equal to 1-10 pA or better |

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| | | <ul style="list-style-type: none"> Applied current resolution 0.03-0.005% of current range Maximum current: ± 250 to 400 mA or better Bandwidth of electrometer: less than 4MHz Current accuracy: 20pA or better Fast data acquisition: dual channel 16bit ADC, 1,000,000 samples/sec simultaneously or better CA and CC pulse width: 0.0001 to 1000 sec USB port selectable for data communication Measured current/Potential resolution 0.05 to 0.0015% of current range |
| | | <ul style="list-style-type: none"> AC Impedance / Impedance Time / Impedance – Potential Plots Bode : log Z vs log (freq) Bode : Phase , vs log (freq), Bode : log Z'' & Z' vs log (freq) Bode: log Y vs log (freq), Nyquist; Z'' vs Z', Interactive 3D Plots, Admittance; Y'' vs Y' Warburg: Z'' & Z' vs $w^{1/2}$ w-angular frequency, Z' vs w Z'', Z' vs Z''/w, Cot (phase) vs $w^{1/2}$ |
| | | <ul style="list-style-type: none"> Corrosion and Passivity study Tafel Plot (TAFEL), Potentiodynamic deactivation, Pitting corrosion, Corrosion rate, Linear Polarisation, Corrosion current, etc. |
| | | <ul style="list-style-type: none"> Photovoltaic studies: I-V measurements, I max, Pmax, Fill factor, etc. |
| | | <ul style="list-style-type: none"> The system should be capable of upgradation to Bipotentiostat and secm. |
| | | <ul style="list-style-type: none"> Software Features: Software for data processing. Software should have an Integrated digital CV simulator and fitting program, user-defined and Mechanisms Integrated impedance simulator and fitting program. Graphic Display Present data plot, 3D surface plot: Overlay plots: several sets of data overlaid for comparison, add data to overlay: adding data |

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| | | files to overlay plot, parallel plots, etc. |
| | | <ul style="list-style-type: none"> Up-gradation of the software will be done once a year or as and when updated versions of the software are available. |
| | | <ul style="list-style-type: none"> Additional Accessory: Pt Working Electrode – 02 No. Glassy Carbon Working Electrode – 02 No. Ag/AgCl Reference (aq) – 02 No. Ag/AgCl Reference (non aq) – 02 No. Calomel Reference Electrode – 02 No. Pt Wire Counter Electrode – 02 No. Electrode Polishing Kit & Cell Stand* - 02 No. Sample vial (Glass) (20 mL/50mL) (5 pcs) Teflon cap for sample holder (5pcs) Electrode Holder suitable for 3 or 4 electrode and thin films Purge tube Additional cable (1.5 m cell cable) |
| | | <ul style="list-style-type: none"> Computer system: System should supply with suitable PC configuration with windows-based operating system, i7 processor (latest)/Ryzen 7, 4GB Graphics, minimum 16GB RAM, 19-inch monitor, 500GB SSD, keyboard, mouse and colour LaserJet printer, CPU should have a CD drive etc. |
| | | <ul style="list-style-type: none"> Training: Demo should be provided and on-site sufficient training should be provided to the staff who will be operating the system. |
| | | <ul style="list-style-type: none"> Provide at least 3 years' comprehensive warranty and spare parts for at least 7 years. |
| | | <ul style="list-style-type: none"> Should be supplied with 3KVA UPS for backup supply to Instrument. |
| | | <ul style="list-style-type: none"> Should be supplied with all the required assemblies and interfacing cables. |
| | | <ul style="list-style-type: none"> Plug Type - India or should be supplied with a compatible plug convertor. |
| | | <ul style="list-style-type: none"> Should provide the user list contact number and email. |
| | | <ul style="list-style-type: none"> Should provide the live instrumental demo and technical clarifications before the technical bid is finalized. |
| | | <ul style="list-style-type: none"> Custom Clearance at Goa Airport/Vasco Airport. (In Case of Imported Items) |
| | | <ul style="list-style-type: none"> IQ, OQ to be provided by the vendor after successful installation |

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| | | <ul style="list-style-type: none"> Supply and Installation: National Forensic Sciences University, Goa Campus, Curti, Ponda, Goa, India, 403401. |
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| [B] | IMPORTANT TERMS AND CONDITION FOR SUPPLY |
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| | <p>1. <u>Delivery:</u> (FORD) Dr. Naveen Chaudhari (Campus Director) National Forensic Sciences University NFSU Goa Campus, Curti, Near Goa Dairy Ponda, Goa-403 401 Ph: 9902321100 ,0832-2313036/3026 & 0832-2313034/3032 E-mail: director_goa@nfsu.ac.in & Purchase_goa@nfsu.ac.in</p> |
| | <p>2. <u>Installation/Inspection:</u> NFSU, Goa Campus</p> |
| | <p>3. <u>DSIR Certificate:</u> This University DSIR Certificate to availing the custom duty exemption as per notification of Ministry of Science and Technology, Department of Scientific and Industrial Research Government of INDIA. DSIR No: TU/RG-CDE (1155)/ 2022 Dtd: 16/09/2022 valid up to 31/08/2025.and Notification No: 42/2022-Customs Dtd: 13/07/2022.</p> |
| | <p>4. <u>Payment:</u> By NFSU Goa Campus</p> |
| | <p>5. <u>Notification Regarding GST:</u> As per Govt. of India Ministry of Finance (Department of Revenue) Notification No: 11/2022-Central tax - (Rate) Dtd: 13/07/2022 Taxes will be livable as per GST prevailing rules and regulation.</p> |

All other terms & conditions will remain unaltered as published in earlier advertisement.

Sd/-

Executive Registrar
NFSU, Gandhinagar

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