

Ref. No.: Revised Tender. 04/NCA/2019
Date: 03-01-2019

CORRIGENDUM

This is for information of all the bidders that following amendments/ modifications are being made in the tender document (Ref. Tender No. 04/NCA/2019) for selection of bidders for the supply, installation and maintenance service of Electrochemical work station. (Annexure I).

The bidders are advised to take into the account the amendments/modifications before submission of their bids against this tender. If any bidder has already submitted their bid, then they should resubmit their bid taking into account, following amendments/ modifications. For convenience and clarity, the revised Tender documents including the formats are being uploaded in Nizam College website i.e. www.nizamcollege.ac.in

Last date of submission is extended up to 09-01-2019 (Wednesday)




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Annexure – 01

Technical Specifications

Schedule: Scientific Equipment

Electrochemical Workstation Requirements:

Latest Windows-based Electrochemical instrument to perform the Bi-Potentiostat, Galvanostat, Impedance and Corrosion measurements and should have following techniques

Following are the Techniques to be Included:

Bi-Potentiostat Techniques

Cyclic Voltammetry with CV Simulation and Fitting Program,
Linear Sweep Voltammetry, Chrono Amperometry,

Galvanostat Techniques

Chrono Potentiometry, Chronopotentiometry with Current Ramp,
Multi-Current Steps , Potentiometric Stripping Analysis.

Corrosion Techniques

Tafel Plot, Linear Polarisation, Cyclic Polarization, Pitting Corrosion, Corrosion current
Potentiodynamic deactivation/Polarization etc

Impedance Techniques

AC Impedance with frequency Range of 10 μ Hz to 1MHz,
Impedance – Time, Impedance – Potential, Impedance Simulation and Fitting program
Impedance Techniques should have capability to plot Interactive 3D Plots and various plots like
Bode, Nyquist, Admittance, Warburg, Mott-Schottky Plots Etc.,

Solar Plots

Current – E, Linear Pol Res, Solar Plot (Isc, Voc, Pwr Max (W), FF, Voltage max (V))

Other Techniques to be Included -

Open Circuit Potential – Time, Bulk Electrolysis with Coulometry. Chrono Coulometry

Electrochemical Workstation Hardware Specification:

- Potential range: -10 to +10V
- Potentiostat rise time: < 1 μ s or better
- Compliance Voltage: \pm 12V
- Current range: upto 150mA or better
- Reference electrode input impedance: 1e10 ohm
- Current Ranges smallest current range: \pm 10 pA (without gain amplifier) to current range 150 mA in Ten ranges
- Current measurement resolution: 0.3 pA or better
- Resolution of applied potential: 150 μ V or better
- Minimum potential increment in CV: 100 μ V or better
- CV and LSV scan rate: 100 to 10,000 V/s
- CA and CC Pulse width :100 μ s to 500 sec
- CA and CC minimum sample interval :10 μ s or better
- Automatic and manual iR compensation
- Flash memory for quick software update

- Serial port or USB port selectable for data communication

Accessories Required for electrochemical experiments:

3 mm dia. Glassy Carbon Working Electrode – 2 Nos
 2 mm dia. Platinum Working Electrode – 2 No
 Calomel Reference Electrode – 2 No
 Ag/AgCl Reference Electrode (Aq/Non-Aq) – 3 Each
 Platinum Wire Counter Electrode – 1 No
 Electrode Polishing Kit – 1 No,
 1 Cell Stand with 5 Glass Cells for general EChem experiments

Solar Simulator Requirements:

Illumination Area : < 10cm²
 Optical Filter : AM1.5G covering 400nm to 1100nm
 Class : It should qualify AAA Classification according to ASTM Standards
 atleast
 Intensity : 1 SUN Fixed

Accessories Required for water splitting experiments:

Flat Cell with Teflon Top
 Platinum flag counter and calomel reference electrode,
 with 25mm dia quartz window.
 Glass enclosure on Pt wire gauze /flag counter electrode with tubing to collect the liberated H₂
 gas, stopcock, connected to syringe needle.
 ITO plate (~10 Ω) one side coated 50 X 75mm (2 packs)

DAQ System:

Dell Desktop Computer and hp printer
 Software should also have the provision to perform all the above mentioned techniques along
 with data representations of Solar Plots, Corrosion and Impedance etc.

General:

- Vendor has to clear the goods from the customs and deliver to the Nizam College. We will provide all the necessary clearing documents to the vendor
- Hardware upgradation to any RDE, RRDE, CGME and Integration to use as a spectroelectrochemistry modes should be possible.
- Software up gradation should be free for the life time and also for the additional techniques stated above.
- Company Engineer should be trained at Factory.
- Atleast 20 similar units should be supplied to nearby labs.
- Provide Users list with contact numbers & e-mail id.
- Warranty – Min. 2 Years and 1 Yr AMC should be provided