

NDIAN INSTITUTE OF TECHNOLOGY KANPUR
Department of Chemical Engineering

Enquiry No. IITK/ChE/NV/2016-2017/3 Date 27/06/16
Sub: Quotations invited for Electrochemical Workstation

Techno-commercial quotations are required for the supply of an electrochemical workstation as per the specifications indicated below. Vendors should have at least 10 successful supply of such instruments in IITs in the last five years. Please provide contact addresses.

The sealed quotations (separately for technical and price bidding) should be addressed to Prof. Nishith Verma, ChE and sent to the following address latest by July 11, 2016.

Technical Specifications:

Compliance voltage: ± 30 V or better at ± 2 A

Maximum Output Current: ± 2 A or better at ± 30 V

Output Voltage Range: ± 10 V

Current Ranges: smallest current range: ± 10 nA to current range 1A in nine ranges

Measured current resolution: 30 fA on 10 nA full scale range

Potentiostat Rise/fall Time: 250 ns or lower

Interface: USB interface for connection with PC

Input bias current: < 1 pA

Input Impedance of electrometer: $>1T \Omega // 8$ pF

EIS Hardware

Hardware and software for EIS measurements 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 2A currents. Signal generator frequency range 10 μ Hz - 30 MHz, Frequency range in 10 μ Hz - 1 MHz combination with potentiostat galvanostat. Frequency resolution 0.003%, Input range ± 10 V. Data presentation: Nyquist, Bode, Admittance, Dielectric, Mott-Schottky, Data analysis: Fit and Simulation, Find circle, Element subtraction.

Electrochemistry Cell:

It should consist of the following:

20-90 mL Glass cell with suitable Lid, stand rod, base plate, purge tube 1Nos each, 2mm diameter Pt disc working electrode 1no, 2mm dia Ag Working Electrode tip 1no, Pt wire Counter electrode 1 mm dia 50 mm length 1 no, Pt Rod Counter Electrode 2 mm dia 60 mm long 1 no, Ag/AgCl double junction reference electrode 1 No., Swagelok type Cell with anode and cathode connection 1 no, Polishing Set 1 no.

Electrochemical Software:

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. It should have facility to display up to 4 plots simultaneously. The software should support following basic electrochemical measurements: Cyclic Voltammetry, Sampled DC Voltammetry, Tafel Plots, Differential Pulse Voltammetry, Square Wave Voltammetry. Electrochemical methods like Chrono-Amperometry, Chrono-Coulometry & Chrono-Potentiometry.

Computer & Printer:

A suitable branded Computer like Dell or Compaq or equivalent for system control & data acquisition should be offered with the system. It should have following minimum specs: i3 processor or better, 2 GB SD RAM, 300 GB HDD, 52 x CDD read/write combo drive, 2 USB Ports, 17" TFT Colour Monitor, 101 Keys Keyboard, Optical mouse, suitable laser printer 1 no & 2kVA online UPS with 30 min back up for the instrument.

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