

**NANOSCALE RESEARCH FACILITY  
INDIAN INSTITUTE OF TECHNOLOGY – DELHI  
HAUZ KHAS, NEW DELHI-110016**

31<sup>st</sup> Oct, 2012

**NOTICE INVITING QUOTATIONS**

**Subject: Quotation for purchase of Scanning Electrochemical Microscope from project no RP02395.**

Sealed quotations in separate envelope of technical and commercial bid kept in one sealed outer envelope are invited for purchase of a Scanning Electrochemical Microscope as per specifications given below. Sealed quotation should reach latest by 5.30 P.M. on 22<sup>nd</sup> Nov, 2012 to **Prof. Vikram Kumar, Block VI-116, Nano Research Facility, Indian Institute of Technology Delhi, Hauz Khas, New Delhi - 110016**. The quotation should be superscribed “**Quotation for Scanning Electrochemical Microscope Due on 22<sup>nd</sup> Nov, 2012**”

**Specifications for Scanning Electrochemical Microscope (SECM) with Accessories:**

SECM consisting of bipotentiostat with FRA, high resolution data acquisition, 3-D nanopositioner and software-driven computer controlled preferably through USB interface

**I. Detailed Specifications:**

- |  |   |                                      |
|--|---|--------------------------------------|
| 1. Scan range X, Y, Z (mm)                           | : | 25x25x25 or more                     |
| 2. Minimum Stepper motor resolution                  | : | 32 nm                                |
| 3. Position encoder type                             | : | Linear, zero hysteresis              |
| 4. Closed loop position (To know the probe position) | : | Require                              |
| 5. Linear position encoder resolution                | : | 100 nm                               |
| 6. Maximum Scan speed                                | : | 1 mm/sec or more                     |
| 7. Cell Mount  | : | Optical table standard screw fitting |
| 8. Aux analog input/output                           | : | Require                              |
| 9. Measurement (ADC) resolution                      | : | 16 bit @ 100 kHz                     |
| 10. Probe Potential                                  | : | ± 2 V or more                        |
| 11. Compliance Voltage                               | : | ± 8 V or more                        |
| 12. Potential Rise/fall Time                         | : | 1 V/μsec or more                     |
| 13. Minimum Voltage Resolution                       | : | 61 μV                                |
| 14. Current Range                                    | : | 10 nA to 10 mA or more               |
| 15. Minimum Current Resolution                       | : | 61 fA                                |
| 16. Current measurement accuracy                     | : | <0.5%                                |
| 17. Input Bias Current                               | : | <10 pA                               |

**II. Techniques include:** Scanning Probe Techniques including x, y and z Line and Area Scan, z-Probe Approach Curve, Constant Current Area Map, Standard electrochemical techniques including: Cyclic Voltammetry, Linear Sweep Voltammetry, Impedance Spectroscopy, Chronoamperometry, Chronopotentiometry, Square Wave Voltammetry, Normal and Differential Pulse Voltammetry

- III. Accessories:** Electrode Kit consisting of two Platinum microelectrodes of diameter 10  $\mu\text{m}$  and 25 $\mu\text{m}$  and one Au microelectrode of diameter 10  $\mu\text{m}$ , Pt wire counter electrode, Ag/AgCl reference electrode for aqueous and non-aqueous systems and test sample, base plate with stand rod, Cell vessel (20-90 ml) and cell vessel lid with sleeve, mounting ring and stoppers
- IV. Compatible Software** for all analyses of SECM results (3D Plot etc) and Std Electrochemical Techniques
- V. Compatible Computer to operate SECM and potentiostat** (mention the specs clearly in the quotation)

**Terms & Conditions:**

1. The quotations must have validity of at least three months.
2. Quotation must include insurance and air-freight charges, delivery period of the items addresses to The Indian Institute of Technology, Delhi, India (CIF, New Delhi).
3. The products will be used for educational purposes. Any applicable academic institution discounts should be offered and stated.
4. Detailed Brochures should accompany the offer.
5. If the bidder is an authorized dealer then the authorized Indian dealership certificate from the principles should be enclosed.
6. 2 years warranty desirable.
7. Payment will be through irrevocable letter of Credit.
8. In case the items are proprietary products of the company, a proprietary item certificate stating the same must be provided.
9. Training should be provided free of cost.
10. List of end user should be provided.
11. Institute reserves the right to accept or reject any or all the quotations without assigning reasons thereof

Chairman, PFC, NRF