



INDIAN INSTITUTE OF TECHNOLOGY MADRAS  
Chennai 600 036

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**Prof. Aravind Kumar Chandiran**  
Project Coordinator

Ref: CH/2019/ARAK/ECHEM  
Dated: 27.12.2019

Limited Tender No: **CH/2019/ARAK/ECHEM**

Dear Sir/Madam,

On behalf of the Indian Institute of Technology Madras, offers are invited for the supply of "**Potentiostat/Galvanostat with Impedance spectrometer**" conforming to the specifications given in (**Annexure-I**):

**Instructions to the Bidder**

- (i) **Preparation of Bids:** - The Limited tenders should be submitted under two-bid system (i.e.) Technical bid and Financial bid.
- (ii) **Delivery of the tender:** - The tender shall be sent to the below-mentioned addresses either by post or by courier so as to reach the following address before the due date and time specified in our Schedule:  
**Prof. Aravind Kumar Chandiran, Chemical Engineering, IIT Madras, Chennai 600 036**
- (iii) **Opening of the tender:** - The offer/Bids will be opened by a committee duly constituted for this purpose. The technical bids will be opened first and it will be examined by a technical committee which will decide the suitability of the bid as per our specifications and requirements. In respect of opening of financial bid, those bidders who are technically qualified only will be called for.
- (iv) **Prices:** - The price should be quoted in net per unit (after breakup) and must include all packing and delivery charges to **Department of Chemical Engineering**. The offer/bid should be exclusive of taxes and duties, which will be paid by the purchaser as applicable. However the percentage of tax & duties should be clearly indicated.

The price should be quoted without custom duty and excise duty, since I.I.T. Madras is exempt from payment of excise duty, and the custom duty will be paid at concessional rate against duty exemption certificate.

In case of import supply, the price should be quoted on EX-WORKS and CIP basis indicating the mode of shipment.



**Dr. ARAVIND KUMAR CHANDIRAN**  
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- (v) **Agency Commission:** - Agency commission, if any, will be paid to the Indian agents in Rupees on receipt of the equipment and after satisfactory installation. Agency Commission will not be paid in foreign currency under any circumstances. The details should be explicitly shown in Tender even in the case of 'Nil' commission. The tenderer should indicate the percentage of agency commission to be paid to the Indian agent. The foreign Principal should indicate about the percentage of payment and it should be included in the originally quoted basic price, if any.
- (vi) **Terms of Delivery:** - The item should be supplied to our Departments as per Purchase Order. In case of import supply, the item should be delivered at the cost of the supplier to our Institution. The Installation/Commissioning should be completed as specified in our important conditions.
- (vii) IIT Madras reserves the full right to accept / reject any tender at stage without assigning any reason.

Yours sincerely,  
Aravind Kumar Chandiran  
Email: [aravindkumar@iitm.ac.in](mailto:aravindkumar@iitm.ac.in)  
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Dr. ARAVIND KUMAR CHANDIRAN  
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Indian Institute of Technology Madras  
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## SCHEDULE

### Important Conditions of the tender

1. The due date for the submission of the tender is **17.01.2020, 3:00 pm.**

The offers / bids should be submitted in two bids systems (i.e.) Technical bid and Financial bid.

The Technical bid should consist of all technical details / specifications only. The Financial bid should indicate item-wise price for each item and it should contain all Commercial Terms and Conditions including Taxes, transportation, packing & forwarding, installation, guarantee, payment terms, pricing terms etc. The Technical bid and Financial bid should be put in separate covers and sealed. Both the sealed covers should be put in a bigger cover. The Limited Tender for supply of "**Potentiostat/Galvanostat with Impedance spectrometer**" should be written on the left side of the Outer bigger cover and sealed.

2. If an Indian agent is involved, the following documents must be enclosed:

Foreign principal's proforma invoice indicating the commission payable to the Indian Agent and nature of after-sales service to be rendered by the Indian Agent.

- ✓ Copy of the agency agreement with the foreign principal and the precise relationship between them and their mutual interest in the business.
- ✓ The enlistment of the Indian agent with Director General of Supplies & Disposals under the Compulsory Registration Scheme of Ministry of Finance.

3. The offer/bids should be sent only for a machine that is available in the market and supplied to a number of customers. A list of customers in India and abroad with details must accompany the quotations. Quotations for a prototype machine will not be accepted.

4. Original catalogue (not any photocopy) of the quoted model duly signed by the principals must accompany the quotation in the Technical bid. No prices should ever be included in the Technical bid.

5. Documentary proof for the claimed position and repetition accuracies must be obtained from the principals and submitted along with the relevant pages of the standards.

6. Compliance or Confirmation report with reference to the specifications and other terms & conditions should also be obtained from the principal.

7. **Validity:** Validity of Quotation not less than 60 days from the due date of tender.

8. **Delivery Schedule:-** The tenderer should indicate clearly the time required for delivery of the item. In case there is any deviation in the delivery schedule, liquidated damages clause will be enforced or penalty for the delayed supply period will be levied.

9. **Risk Purchase Clause:-** In the event of failure of supply of the item/equipment within the stipulated delivery schedule, the purchaser has all the right to purchase the

item/equipment from other sources on the total risk of the supplier under risk purchase clause.

**10. Payment:-**

- i. No Advance payment will be made for Indigenous purchase. However 90% Payment against Delivery and 10% after installation are agreed to wherever the installation is involved. In case of import supplies the payment will be made only through 100% Letter of Credit i.e. (90% payment will be released against shipping documents and 10% after successful installation wherever the installation is being done).
- ii. **Advance Payment:-** No advance payment is generally admissible. In case of specific percentage of advance payment is required, the Foreign Vendor has to submit a Bank Guarantee equal to the amount of advance payment and it should be routed through the Beneficiary Bank to the end user Bank. Otherwise, the Indian Agent of the foreign vendor has to submit a Bank Guarantee through a Nationalized Bank of India.

**11. On-site Installation:** - The equipment or machinery has to be installed or commissioned by the successful bidder within 15 to 20 days from the date of receipt of the item at site of IIT Madras.

**12. Previous Experience:**

Participating tenderer should meet the following criteria for undertaking the project:

- Experience in supplying the same equipment atleast to five educational institutions such as IITs, IISc and other Technological Institutions/Universities or National Labs of similar repute in the last three years.

**13. Warranty/Guarantee:** - The offer should clearly specify the warranty or guarantee period for the machinery/equipment. Any extended warranty offered for the same has to be mentioned separately. (for more details please refer our Technical Specifications).

**14. Late offer:** - The offers received after the due date and time will not be considered. The Institute shall not be responsible for the late receipt of Tender on account of Postal, Courier or any other delay.

**15. Acceptance and Rejection:** - I.I.T. Madras has the right to accept the whole or any part of the Tender or portion of the quantity offered or reject it in full without assigning any reason.

**16. Do not quote the optional items or additional items unless otherwise mentioned in the Tender documents / Specifications.**

**17. Disputes and Jurisdiction: -**

- i. **Settlement of Disputes:** Any dispute, controversy or claim arising out of or in connection with this PO including any question regarding its existence, validity, breach or termination, shall in the first instance be attempted to be resolved amicably by

both the Parties. If attempts for such amicable resolution fails or no decision is reached within 30 days whichever is earlier, then such disputes shall be settled by arbitration in accordance with the Arbitration and Conciliation Act, 1996. Unless the Parties agree on a sole arbitrator, within 30 days from the receipt of a written request by one Party from the other Party to so agree, the arbitral panel shall comprise of three arbitrators. In that event, the supplier will nominate one arbitrator and the Project Coordinator of IITM shall nominate one arbitrator. The Dean IC&SR will nominate the Presiding Arbitrator of the arbitral tribunal. The arbitration proceedings shall be carried out in English language. The cost of arbitration and fees of the arbitrator(s) shall be shared equally by the Parties. The seat of arbitration shall be at IC&SR IIT Madras, Chennai..

- ii. **The Applicable Law:** This Purchase Order shall be construed, interpreted and governed by the Laws of India, Court at Chennai shall have exclusive jurisdiction subject to the arbitration clause.
- iii. Any legal disputes arising out of any breach of contract pertaining to this tender shall be settled in the court of competent jurisdiction located within the city of Chennai in Tamil Nadu.

18. All Amendments, time extension, clarifications etc., will be uploaded on the website only and will not be published in newspapers. Bidders should regularly visit the above website to keep themselves updated. No extension in the bid due date/ time shall be considered on account of delay in receipt of any document by mail.

**Acknowledgement:-** It is hereby acknowledged that the tenderer has gone through all the conditions mentioned above and agrees to abide by them.

**SIGNATURE OF TENDERER  
ALONG WITH SEAL OF THE  
COMPANY WITH DATE**

IIT Madras proposes to procure two numbers of potentiostat/galvanostat incorporated with electrochemical impedance spectrometer for their research in electrochemistry. The following technical specifications should be complied with completely to qualify the technical bid. A detailed technical compliance statement should be provided and manufacturer's product brochure should support it. Information provided in vendor/supplier/redistributor/reseller's website cannot be considered as a supporting document.

Number of independent instruments required: 2

### Technical Specifications

1. Cell Connections: 2, 3 & 4 terminal measurements.
2. The instrument should be capable of collecting at least 100000 samples/second
3. The compliance voltage should be  $\pm 12V$  or better
4. The compliance current should be  $\pm 2A$  or better, without an external booster.
5. Potential rise time between two applied voltages should be less 400ns for  $\Delta V=2V$ .
6. Applied voltage should be  $\pm 10V$  or better
7. Applied voltage resolution should be less than  $0.4\mu V$  (typical for  $\pm 10$  mV signal), and less than  $300\mu V$  (typical for  $\pm 10$  V signal)
8. Applied voltage accuracy should be at least  $\pm 0.2\%$  of value  $\pm 2mV$  or better
9. Since the machine is expected to be used for biological applications, scan rate should be at least  $5000Vs^{-1}$  or better.
10. Maximum scan range should be at least  $\pm 10$  V with a resolution of  $300\mu V$  or better
11. Applied maximum current range should be at least  $\pm 2$  A with a resolution of  $60\mu A$  or better
12. Applied Minimum current range should be at least  $\pm 200$  nA with a current resolution of  $60$  pA or better
13. Input impedance should be greater than  $10^{12}\Omega$  or better, for high voltage measurement accuracy
14. Current measurement ranges should be at least between  $2A$  and  $200nA$  with several ranges.
15. Measured current resolution should be at least  $6$  pA at  $200$  nA range
16. Equipment should be portable and should be a single box configuration as the workstation is expected to be used for *insitu* studies along with x-ray diffractometer, PE loop tracer and confocal laser scanning microscope.
17. Impedance (EIS)  
Mode: Potentiostat/Galvanostatic with in-built hardware.  
Frequency Range  $10\mu Hz$  to  $1$  MHz with minimum AC voltage amplitude of  $0.1mV$  RMS @  $\pm 2A$  Current
18. Digital inputs / outputs, auxiliary voltage input, DAC voltage output options must be available
19. USB interface or ethernet should be provided to communicate with PC
20. It is preferred to have a built-in calibration with internal standard for routine calibration check.
21. The instrument should be installed in two different computers using the individual software platform.
22. Two years onsite warranty from the date of installation of the products.
23. Optional components: Electrochemical accessories for the quoted product shall be quoted under the optional category.
24. The vendor should have supplied at least one similar instrument in India in the past two years. List of their customers and their contact details should be provided. IIT-Madras shall

  
27/12



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inquire the bidders' customers about the quality of product/service. If the testimonial from their customers is not satisfactory, IIT-Madras reserves to reject the bid based on technical grounds.



  
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