



INDIAN INSTITUTE OF TECHNOLOGY, KANPUR
GT ROAD, KALYANPUR, KANPUR – 208016
UTTAR PRADESH, INDIA

TENDER REFERENCE NO.: IITK/MSE/SM/2023-24/02

BID SUBMISSION END DATE-19.10.2023

TENDER DOCUMENTS

For

“Purchase of Semiconductor Parameter Analyzer and Probe Station”

Tender document

Department of Materials Science and Engineering
Indian Institute of Technology Kanpur
Kanpur (UP) 208016 India

Enquiry date: September 27, 2023

Enquiry No: IITK/MSE/SM/2023-24/02

| Specifications for Semiconductor Parametric Analyzer with mini probe station | | |
|---|--|---|
| Sr. No. | Parameter | Specification |
| 1 | Mainframe | Main instrument should have at least 10 or more slots and should allow upgrading with more SMUs if empty slots are available. |
| | | Must have a inbuilt touch screen display |
| | | Must be upgradable to 10kV and 1500A or more in future using the same mainframe. |
| 2 | Ground Unit | A separate ground unit should be available with atleast 4A sink current independent of the 10 slots |
| Should include one medium power source/measure unit | | |
| 3 | Maximum voltage range and resolution | 100 V with measure resolution of 100uV with atleast 20mA of current at 100V (The operation should be automatic sweep control in forward and reverse mode) |
| 4 | Maximum current range and resolution | 100mA with measure resolution of 100nA (The operation should be automatic sweep control in forward and reverse mode) |
| 5 | Minimum current range and resolution | 1nA with measure resolution of 10fA |
| 6 | Pulse width range for pulsed measurement | 500us to 2 s |
| Should include one medium current source/measure unit | | |
| 7 | Maximum voltage range and resolution | ± 30 V with measurement resolution of 40uV |
| 8 | Maximum current range and resolution | ± 100 mA with measurement resolution of 100nA (in DC mode) |
| 9 | Minimum current range and resolution | ± 10 μ A with resolution of 10pA |
| 10 | Pulse width range for pulsed measurement | 50 μ S to 2 S with pulse width resolution of 2 μ S |
| General | | |
| 7 | Should have convenient user interface preferably windows based | |
| 8 | Built-in hard drive: SSD 256 GB with 8GB RAM | |
| 9 | Interface for remote control | USB, GPIB, LAN |
| 10 | Built in Memory should be available | |
| 11 | The instrument software/firmware should have both offline and online capability | |
| 12 | Should have capability to sweep the source using the scroll knob on the instrument enabling real time device characterization | |
| 13 | Probe Station should have following key specifications: <ol style="list-style-type: none"> i. Table size 400mmx400mmx110mm. ii. 4 micro-positioner with Triax adapters iii. 4-inch chuck with 5-micron flatness iv. 4 micropositioner flange adapters, 4-Micropositioners) v. Temperature Specs: 250 °C Max. vi. Current supporting range from 1 pA to 1A vii. Tip Size: 5 microns, 0.5 mm thick Tungsten viii. Lamp (Incident: 6V 15W Lamp) | |

| | |
|----|---|
| | ix. Microscope (1X-4X) Micro positioner Specs: - i. Linear Motion. ii. X-Y-Z Travel 12mm-12mm-12mm iii. Lead Screw 80TPI Thread/inch iv. Resolution- 0.8 micron v. Probes/Connectors- Triaxial connectors. vi. Triaxial Tip Holder- Tubular, vii. Supporting Frequency- Dc to 40 MHz |
| 14 | Setup warranty: 3 – years |

Address quotations to : shikharm@iitk.ac.in

Dr. Shikhar Misra

FB-411,
Department of Materials Science and Engineering
Indian Institute of Technology, Kanpur
Kanpur, UP 208016, India

Terms and conditions:

1. All accessories required for installation must be included in the quote.
2. All charges (taxes, shipping, installation, training etc.) should be included in the quote. The quoted price should be FOR IIT Kanpur.
3. Include authorization certificate from the principal if you are a local agent.
4. The manufacturer’s specification sheets for the system with all technical details must be enclosed. All technical drawings of the quoted system should be provided in the technical bid.
5. Attach compliance sheet and complete details of the system and its components.
6. Attach list and contact details of previous customers in India and abroad who are using your sputtering system of comparable capability to the system here.
7. Quotations should have a minimum validity of 90 days.
8. The goods should be delivered no later than 4 months (~17 weeks) from the day of the placement of the order from IIT Kanpur with the pre-dispatch inspection no later than 3 months from the receipt of order. The delivery period should be specifically stated.
9. Payment terms should be clearly mentioned in the quote or institute rules.
10. The institute reserves the right of accepting and rejecting any quotation without assigning any reason.
11. The indenter reserves the right to cancel the tender without being answerable.

COMMERCIAL TERMS AND CONDITIONS

1. DEFINITIONS

These Commercial Terms and Conditions shall constitute the General Conditions of Contract,

where no separate contract is signed with the selected Bidder(s), and, the Bidders by putting their signature and stamp on each page of this Section V are binding themselves to these Terms and Conditions. In the Commercial Terms and Conditions as defined below, words and expressions shall have the following meanings assigned to them:

- a. "Contract" means the agreement of the Parties relating to the procurement of Goods and / or the IITK Purchase Order (PO), and all attachments incorporated by reference, which shall form an integral part of the Contract. In the event of any discrepancy, the documents to prevail shall be given precedence in the following order: (i) the Contract (where separately signed), (ii) the IITK Purchase Order, (iii) its attachments, and (iv) these Commercial Terms and Conditions;
- b. "Contractor" means the person or entity named in the 'CONTRACTOR' named field of the IITK Purchase Order and any agreed in writing by the IITK legal successor(s) in title;
- c. "Day" means any calendar day;
- d. "Delivery Date" means the latest possible date by which the Goods shall be delivered by the Contractor to the IITK, as specified in the 'DELIVERY DATE' named field of the IITK Purchase Order;
- e. "Force Majeure" shall mean any unforeseeable exceptional situation or event beyond the Parties' control which prevents either of them from fulfilling any of their obligations under the Contract, was not attributable to error or negligence on their part (or of their partners, contractors, agents or employees), and could not have been avoided by the exercise of due diligence. Defects in equipment or material or delays in making them available, labour disputes, strikes or financial problems cannot be invoked as Force Majeure by the defaulting Party. Neither of the Parties shall be held liable for breach of its obligations under the Contract if it is prevented from fulfilling them by Force Majeure. The Party invoking Force Majeure shall notify the other without delay, stating the nature, likely duration and foreseeable effect, and take any measure to minimise possible damage;
- f. "Goods" means all of the goods to be supplied to the IITK by the Contractor under the Contract;
- g. "IITK" means the Indian Institute of Technology Kanpur;
- h. "IITK Purchase Order" means the IITK's official Purchase Order document;
 - (i) "Party" means the IITK or the Contractor and "Parties" means the IITK and the Contractor; and
 - (ii) "Place(s) of Delivery" means the location(s) or place(s) where the Goods are to be delivered, as specified in the 'SHIP TO' named field of the IITK Purchase Order.

2. CONCLUSION OF THE CONTRACT

- 2.1.** The Contract is made between the IITK and the Contractor. The Contractor is engaged as an independent contractor for the sole purpose of delivering the Goods.
- 2.2.** The Contract shall be concluded upon the Contractor duly following the countersigning procedure as stated in the IITK Letter of Intent (LOI).

3. FUNDING

This Contract shall become and remain effective only on the condition that an official Purchase Order is issued by IITK following the conclusion of tender exercise. In the event this is not or no longer shall the case, the IITK without unreasonable delay notify the Contractor thereof.

Any continuation of the Contractor's performance under this Contract after being notified by the IITK shall be at the Contractor's risk and expense.

4. DELIVERY AND TAKE-OVER OF GOODS

The Contractor shall deliver the Goods at the Place(s) of Delivery. On behalf of the IITK, a duly authorised representative(s), shall take-over the Goods upon delivery. Take-over of the Goods by the IITK shall not be deemed acceptance of the Goods by the IITK. The time of delivery as specified in the Contract / PO shall be strictly adhered to, and time shall be of the essence.

5. QUALITY OF GOODS

1.1. The Contractor shall deliver Goods that are:

- a. of the quality, quantity and description as required by the Contract / PO; and
- b. free from any right or claim of a third party, including rights based on industrial property or other intellectual property.

1.2. Should the Goods be of the type “homogeneously defined” or disposable, the Contractor shall provide a sample and undertake, certify, and guarantee that all Goods delivered shall be of the same quality and characteristics as the sample(s) provided.

2. INSPECTION AND ACCEPTANCE

2.1. The duly authorised representative(s) of the IITK shall have the right, before payment, to inspect the Goods either at the Contractor's stores, during manufacture, at the ports and/or in places of shipment, or at the Place(s) of Delivery. The Contractor shall provide all facilities for such inspection. The IITK may issue a written waiver of inspection. Any inspection carried out by representative(s) of the IITK or any waiver thereof shall be without prejudice to other provisions of the Contract concerning obligations assumed by the Contractor, including specifications of the Goods.

2.2. Upon delivery and inspection of the Goods, the IITK shall inspect the goods as soon as possible and complete the Goods Receiving Document. Should any Goods fail to conform to the technical specifications, codes and standards under the Contract, the IITK may reject the Goods. The Contractor shall, at no cost to the IITK, replace the rejected Goods or, alternatively, rectify the non-conformity.

2.3. In the case of Goods ordered on the basis of specifications or samples, the IITK shall have the right to reject the Goods or any part thereof and terminate the Contract if the Goods do not conform to the specifications and/or samples. Nothing in this clause shall in any way release the Contractor from any warranty or other obligations under the Contract.

3. SHIPPING AND INSURANCE

For overseas orders, shipping arrangements shall be co-ordinated by IITK. Original shipping documents including the packing list shall be airmailed/emailed by the Contractor to the (Deputy Registrar (S&P), IIT, Kanpur – 208 016, UP, India).

4. OBSERVANCE OF LAW AND EXPORT LICENCES

The Contractor shall comply with all laws, ordinance, rules and regulations bearing upon the performance of its obligations under the terms of the Contract. If an export licence or any other governmental authorisation is required for the Goods, it shall be the obligation of the Contractor to obtain such licence or governmental authorisation. In the event of the Contractor's failure to obtain such licence or authorisation within a reasonable time, the IITK may immediately terminate the Contract. Where the award procedure or execution of the Contract is vitiated by substantial errors or irregularities or by fraud, the IITK shall suspend execution of the Contract.

Where such errors, irregularities or fraud are attributable to the Contractor, the IITK may also refuse to make payments or may recover monies already paid, in proportion to the seriousness of the errors, irregularities or fraud. The purpose of suspending the Contract shall be to verify whether

presumed substantial errors and irregularities or fraud have actually occurred. If they are not confirmed, execution of the Contract shall resume as soon as possible. A substantial error or irregularity shall be any infringement of a contract or regulatory provision of India, resulting from an act or an omission that causes or might cause a financial loss.

5. PRICE

The price of the Goods shall be as stated in the Purchase Order and may not be increased.

6. PAYMENT

- 6.1.** Unless otherwise stipulated in the Purchase Order, the IITK shall make payment within thirty (30) Days of the later of:
- a.** Successful delivery of the goods to IITK as confirmed by the consignee (Assistant Registrar, Store & Purchase, IIT-Kanpur), endorsed by the indenter and approved by the indenters' Head of Department / Section;
 - b.** Receipt of customary shipping documents and any other documents specified in the Contract; and (c) Receipt of the original invoice issued by the Contractor.
- 6.2.** All invoices shall be in original and shall contain the IITK Purchase Order number, and a description, the quantities, unit and total price(s) of the Goods delivered. The currency of invoice and payment shall be as specified in the Purchase Order. Unless otherwise authorised by the IITK, a separate invoice shall be submitted for each shipment under the Contract / PO. Subject to Clause 11 below ('Tax Exemption'), if applicable, the GST amount shall be separately identified in the invoice.
- 6.3.** Payments shall be made in the currency stated in the Contract / PO, on the basis of the equivalent value of INR on the day of payment and paid directly into the nominated bank account.
- 6.4.** The IITK shall not pay any charge for late payments.

7. TAX EXEMPTION

The Contractor's price shall reflect any tax exemption to which the IITK is entitled. If it is subsequently determined that any taxes that have been included in the price are not required to be paid or if, having been paid, any such taxes are subject to refunding, the IITK shall deduct the amount from the Contract price. Payment of such adjusted amount shall constitute full payment by the IITK. In the event that any taxing authority refuses to recognize the IITK's exemption from taxes, the Contractor shall immediately consult with the IITK to determine a mutually acceptable procedure for settling the applicable amount.

8. WARRANTY

- 8.1.** The Contractor warrants that the Goods furnished under the Contract conform to the technical specifications, description and standards specified in the Contract, and are new and unused, and free from defects in design, workmanship and/or materials.
- 8.2.** The Contractor shall provide a warranty for the Goods for a period of one year from the date of acceptance of the Goods by the IITK, unless the standard manufacturer's warranty period is longer in which case the longer period shall apply.
- 8.3.** In the case of "homogeneously defined" or disposable goods, should any portion of the Goods, at any time, not comply with clause 5.1 or 5.2 herein or otherwise prove to be defective, the Contractor shall, upon written notification from the IITK, replace that portion of the Goods and bear all costs associated with the replacement of same.

9. PACKING

- 9.1.** The Goods shall be packed and marked in a proper manner and in accordance with the Contract and any statutory requirements and any requirements of the carrier(s). In particular, the Goods

shall be marked with the IITK Purchase Order number and the net, gross and tare weights, the name of the contents shall be clearly marked on each container and all containers of hazardous goods (and all documents relating thereto) shall bear prominent and adequate warnings.

- 9.2. The Contractor shall provide such packing of the Goods as is required to prevent their damage or deterioration during transit to their final destination. The packing shall be sufficient to withstand, without limitation, rough handling during transit. Packing case size and weights shall take into consideration, where appropriate, the remoteness of the final destination and the absence of appropriate handling facilities at all points in transit.
- 9.3. All packaging materials shall be non-returnable.

10. DEFAULT AND DAMAGES

- 10.1. If due to reasons attributable to the Contractor, the Contractor fails or refuses to:
 - a. deliver any or all of the Goods under the Purchase Order;
 - b. comply with any or all of the terms and conditions set out in the Purchase Order; or
 - c. deliver any or all of the Goods under the Purchase Order on or before the Delivery Date; the IITK may hold the Contractor in default under the Purchase Order.
- 10.2. When the Contractor is thus in default, the IITK may, by written notice to the Contractor, immediately terminate the Purchase Order in whole or in such part or parts thereof in respect of which the Contractor is in default.
- 10.3. Alternatively, to clause 14 above when the Contractor is thus in default, the IITK may, at its own discretion, set a reasonable period of time for the Contractor to remedy its default. Any new Delivery Date shall be specified in a written amendment to the Purchase Order, duly countersigned by the Contractor.
- 10.4. The IITK may, at its discretion, impose penalties upon the Contractor calculated in accordance with clause 15 for each Day the Contractor is late in delivering the Goods past the Delivery Date initially specified in the Purchase Order.
- 10.5. If the Contractor does not remedy its default within the period of time accorded under clause 16, the IITK may, by written notice to the Contractor, terminate the Purchase Order with immediate effect.
- 10.6. Upon any termination of the Purchase Order, in whole or such part(s) thereof in respect of which the Contractor is in default, the IITK may engage another contractor to deliver the Goods and recover any difference in price and any additional costs from the Contractor.
- 10.7. The Contractor shall indemnify the IITK for all losses, charges, costs and expenses, which the IITK may suffer or incur as a result the Contractor's default, including those resulting from engaging another contractor pursuant to this clause 14.

11. PENALTIES

If, in accordance with clause 15, the IITK imposes penalties on the Contractor, such penalties shall amount to One percent (1%) of the total Purchase Order price for each week following the initial Delivery Date specified in the Purchase Order but shall not amount to more than Ten percent (10%) of the total Purchase Order value. The penalties for the delay may be deducted by IITK from any sum(s) due, or to become due, by the IITK to the Contractor.

12. DELAY NOT ATTRIBUTABLE TO THE CONTRACTOR

If the Contractor is delayed at any time in the delivery of the Goods or fulfilment of any other of the Contractor's obligations by any act or omission of the IITK, or by any of its officials, or by any separate contractor(s) contracted by the IITK, or by changes ordered in the type and/or quantity of the ordered Goods, or the Place(s) of Delivery, or any causes beyond the Contractor's reasonable control, or by any other cause, which the IITK determines may reasonably justify the delay, the

Delivery Date of the Goods, or fulfilment of any other of the Contractor's applicable obligations shall be extended for such reasonable period of time as the IITK and the Contractor mutually determine. The set reasonable period of time and any amended delivery date shall be specified in a written amendment to the Contract / PO, duly countersigned by the Contractor.

13. FORCE MAJEURE

As soon as possible after the occurrence of any event constituting Force Majeure, but no later than three (3) Days, the Contractor shall give notice and full particulars in writing to the IITK of the Force Majeure. If the Contractor is thereby rendered unable, wholly or in part, to meet its obligations under the Contract, the IITK may terminate the Contract / PO with immediate effect by providing written notice to the Contractor.

14. INDEMNITY

14.1. The Contractor shall indemnify, hold and save harmless and defend at its own expense the IITK, and all of the foregoing's officials, agents, servants and employees from and against all suits, claims, demands and liability of any nature or kind, including costs and expenses, arising out of acts or omissions of the Contractor or its employees, agents or subcontractors in the performance of the Contract.

14.2. Clause 18 shall include, without limitation, claims and liabilities in the nature of workmen's compensation and claims and liabilities arising out of the use of patented inventions or devices.

15. ASSIGNMENT

15.1. The Contractor shall not assign, transfer, pledge or make other disposition of the Purchase Order or any part thereof or of any of the Contractor's rights, claims or obligations under the Purchase Order except with the express written consent of the IITK. Any assignment made without such consent shall be void and of no effect.

15.2. The Contractor shall not subcontract any of its obligations under the Contract / PO without the express written consent of the IITK. The IITK may require the Contractor to furnish particulars of the proposed subcontract as the IITK deems necessary.

15.3. The IITK's approval of any subcontracting shall not relieve the Contractor from any liability or obligation under the Contract. In any subcontract, the Contractor agrees to bind the subcontractor by the same terms and conditions by which the Contractor is bound under the Contract / PO.

16. INSOLVENCY AND BANKRUPTCY

16.1. Should the Contractor become insolvent or should control of the Contractor change by virtue of insolvency, the IITK may with immediate effect and without prejudice to any other right or remedy available to it, suspend the performance of the Contractor's obligations or terminate the Purchase Order with immediate effect, by providing the Contractor with written notice thereof.

16.2. Should the Contractor be adjudged bankrupt, or should the Contractor make a general assignment for the benefit of its creditors, or should a receiver be appointed on account of the Contractor's insolvency, the IITK may, without prejudice to any other right or remedy available to it, terminate the Purchase Order with immediate effect by providing the Contractor with written notice thereof.

17. TERMINATION

17.1. The IITK shall have the right to terminate the Purchase Order or any of the provisions thereof at any time by serving a three days' notice to the Contractor.

18. WAIVER

A waiver of any breach of or default under the Contract / PO shall not constitute a waiver of any other breach or default and shall not affect the other terms of the Contract / PO. The rights and remedies provided by the Purchase Order are cumulative and are not exclusive of any other rights or remedies.

19. ADVERTISING

The Contractor shall not advertise or otherwise make public the fact that it is a contractor to the IITK. The Contractor shall not in any way use the name, emblem, logo, official seal, or any abbreviation of the IITK.

20. DISCRETION AND CONFIDENTIALITY

The Contractor is required to exercise the utmost discretion in all matters relating to the Contract / Purchase Order. Unless required in connection with the performance of the Purchase Order or expressly authorised in writing by the IITK, the Contractor shall not disclose at any time to any third party any information which has not been made public and which is known to the Contractor by reason of its association with the IITK. The Contractor shall not, at any time, use such information to any private advantage. These obligations do not lapse upon any completion, expiration, cancellation or termination of the Contract / PO.

21. NOTICES

Any notice given in connection with the Contract shall be given in English and in writing and shall be deemed to be validly given if sent by registered mail or by fax or by email to the other Party at the following:

- a. for the IITK: the contact details set out in the 'IITK BUYER' name field of the Purchase Order; and
- b. for the Contractor: the contact details set out in the 'CONTRACTOR' named field of the IITK Contract/Purchase Order.

22. STAFF MEMBERS NOT TO BENEFIT

The Contractor shall not grant to any official of the IITK any direct or indirect benefit or preferential treatment on the basis of the Purchase Order or the award thereof. Any breach of this provision shall constitute a fundamental breach of the Purchase Order.

23. GOVERNING LAW

The Contract shall be governed by and construed in accordance with the substantive laws of the Republic of India.

24. SETTLEMENT OF DISPUTES

- 24.1.** The Parties shall use their best efforts to negotiate and amicably settle any disputes, controversies or claims arising out of, or in connection with, the Contract / Purchase Order or its interpretation.
- 24.2.** If the Parties fail to settle the dispute amicably within thirty (30) Days of commencement of the negotiations, the dispute shall be settled through arbitration. One (1) sole arbitrator shall be appointed by the Director of IITK who shall have full powers to make final and binding decisions subject to prevailing laws of India. The appointing authority shall be the Director of IITK. The place of arbitration shall be Kanpur and the language used in the arbitration proceedings shall be English.

25. PRIVILEGES AND IMMUNITIES

No provision of the Contract / Purchase Order shall be deemed, or interpreted as, a waiver of the privileges and immunities enjoyed by the IITK.

26. AMENDMENTS

No modification, amendment or change to the Contract/Purchase Order, or waiver of any of its provisions, or any additional contractual relationship with the Contractor shall be valid unless approved in the form of a written amendment to the Contract/Purchase Order, signed by a fully authorised representative of each Party.

27. VALIDITY

The invalidity in whole or part of any condition of the Contract / Purchase Order or clause thereof shall not affect the validity of the remainder of such condition or clause.

28. ENTIRE AGREEMENT

The Contract / Purchase Order constitute the entire agreement and understanding of the Parties and supersede any previous agreement, whether orally or in writing, between the Parties relating to the subject matter of the Contract.

29. GOVERNING LANGUAGE

The Contract / Purchase Order shall be executed in the English language which shall be the binding and controlling language for all matters relating to the meaning and interpretation of the Contract / Purchase Order.