

# Global Tender Notification for Probe Stations

(Tender date: 7<sup>th</sup> June 2024)

This is an RFQ (Request for Quote) for procurement of two tabletop probe stations for wafer-level electronic testing of devices semiconductor devices for the Centre for Nano Science and Engineering (CeNSE) at IISc, Bangalore. CeNSE is a multidisciplinary research department at IISc that houses a 14,000 sq. ft. cleanroom and characterization facility used by more than 100 faculty members from various disciplines at IISc. CeNSE also runs a program called Indian Nano electronics Users Program (INUP) which has allowed 8000 participants and 1500 faculty from more than 700 universities and institutes all over India to use the facilities at CeNSE. Consequently, any utility/facility at CeNSE receives significant exposure to scientific community at IISc and beyond. The vendors are requested to factor in the value of this exposure into their quotes. Details of existing facilities are available at:

<http://mncf.cense.iisc.ac.in/>

<http://nnfc.cense.iisc.ac.in/>

## Section 1 – The Process

1. **This order is open to all global Original Equipment Manufacturer (OEM) or their Indian authorized distributor".**
2. Vendors will be required to submit a technical proposal and a commercial proposal in **two separate sealed envelopes**. Quotes in violation of this will be rejected.
3. **The deadline for submission of proposals is June 28<sup>th</sup> 2024, 5:30 pm Indian Standard Time**. Proposals should arrive at the CeNSE office, GF-15, Centre for Nano Science and Engineering, Indian Institute of Science, Bangalore 560012, India, by the above deadline. Please mention **“Tender for probe station”** on the envelopes.
4. The technical proposal should have:
  - a. Relevant technical datasheets. The committee reserves the right to cross-check the information in these datasheets with publicly available information.
  - b. A compliance table with 5 columns. The first column must list the technical requirement, in the order that they are given below. The second column should describe the capability of the tool for that specific requirement. Please be quantitative and consistent with the technical datasheets. In case the technical requirement is a text, second column must provide a technical answer. In case the requirement is a number, please provide a number. Third column must specify whether the technical requirement is met with a “Yes”, “No”, or “Partially”. If the response is “Partially” or “No” the third column, the fourth column must explain the extent of the deviation and, if possible, the reasons for the deviation. The fifth column is for other “Remarks”. You can use it to compare your tool with that of your competitors or provide more details/justifications.

- c. Technical capabilities of any *suggested* accessories/add-ons that may enhance the usability, capability, accuracy or reliability of the tool. Vendors are encouraged to quote for as many add-ons as their tool portfolio permits.
  - d. Any additional capabilities or technical details, which you would like to bring to the attention of the purchase committee. Vendors are encouraged to highlight the advantages of their tools over comparable tools from the competitors
5. If multiple systems fulfil the requirement, vendors can offer multiple bids.
  6. The technical proposal will be evaluated against the technical requirement. Only vendors who meet the technical requirement will be considered for the commercial comparison and negotiation.
  7. The lowest bid L1 will be calculated based on the total price of all items tendered for Basic equipment along with accessories selected for installation, selected optional items, recommended spares and warranty.
  8. The commercial bid must conform to the following:
    - a. The quotations should be CIP Bangalore with validity of 90 days.
    - b. Mention itemized cost of the system, optional items and *required* accessories, such as software, power supply, etc.
    - c. Mention itemized cost, as an option, for any *suggested* accessories/add-ons that may enhance the usability, capability, accuracy, or reliability of the tool. Vendors are encouraged to quote for as many add-ons as their tool portfolio permits.
    - d. Mention the warranty provided with the tool.
      - i. Warranty of 1 year is mandatory. Warranty of 3 years or more is preferred.
      - ii. All electronics and instrumentation must be covered under the warranty. Clearly indicate any part that is not included in the warranty.
  9. The decision of the purchase committee on the execution and evaluation of the tender, is absolute and final.
  10. The RFQ must include references of 5 previous installations, preferably in India. Please provide the names and contact addresses of the referees, so that the committee can contact them independently.
  11. We encourage vendors to give technical presentations, physically or online, so that we can better understand the technical capabilities of their tools and vendors can better understand the requirements.
  12. To schedule the presentations or for technical questions, please contact Dr. Suresha, COO Micro and Nano Characterization Facility (MNCF), Centre for Nano Science and Engineering, Indian Institute of Science, Bangalore 560012, India.  
([sureshasj@iisc.ac.in](mailto:sureshasj@iisc.ac.in))

## Section 2- Technical Specifications

We are looking for two tabletop probe stations for wafer-level electronic testing of devices. The probe station will have an enclosure, 4 micromanipulators, triax cable connections, a vacuum chuck and a microscope. Please find below details for more information.

1. Metal Enclosure (2 number): The probe station should be housed in a metal enclosure.
  - a. The enclosure should have a conductive metal like aluminium for electrical shielding.
  - b. The enclosure should be light-tight with close-door illumination of  $< 1$  lux.
  - c. The enclosure should have a door with a latch for each access.
  - d. The enclosure should have four triax-to-triax on one side for connection with external instruments and micromanipulators.
    - i. The outer wire of the triaxial feedthroughs should be shorted with the body of the enclosure.
    - ii. The central and middle wire of the triaxial feedthroughs should **not** be connected to the body of enclosure. They need to be floating.
  - e. The enclosure 4 coax-to-coax feed-throughs on one side for connection with external instruments and micromanipulators.
    - i. The outer wire of the coaxial feedthroughs should be shorted with the body of the enclosure.
    - ii. The central wire of the coaxial feedthroughs should **not** be connected to the body of enclosure. It needs to be floating.
2. Chuck (1 number):
  - a. Stainless steel or brass vacuum chuck, capable of handling samples of diameter 1 inch to 4 inch.
  - b. The chuck will be vacuum-backed, with rings suitable for various sample sizes (specified above). The vacuum will be available on-site as a utility, so a dedicated backing pump is not required.
  - c. Platen Bar x2 (East/West)
  - d. Triaxial structure for chuck biasing ( $\sim 50$  pA level measurements)
  - e. Triaxial Female Connector should be preinstalled
3. Micromanipulators (4 numbers): For manipulating probes and fine-pitch probing.
  - a. Pitch Resolution:  $1 \mu\text{m}$  or better
  - b. Range: Linear movement of 12 mm in X-Y-Z
  - c. Magnetic bases that can be engaged or disengaged by the user.
  - d. Triaxial type Tip Holder as standard.
  - e. Spring-Type Tip Holder as spare.
  - f. Triaxial cable with 1.5-meter length, with a terminal male connector
  - g. Leakage current should be less than  $10\text{pA}$  @  $\pm 5\text{V}$
4. Probe tips: Tungsten probe tip with
  - a. 01-micron dia (Box of 10)
  - b. 05-micron dia (Box of 10)
5. Digital Microscope (1 number)
  - a. Magnification: 10x - 100x Optical Zoom
  - b. Working distance: 110 mm

- c. Built-in white LED light for sample illumination with >1000 lux intensity.
  - d. USB Cable Connection for connectivity to an external monitor.
- 6. Vacuum Pump
  - a. 7 L/min Flow Rate
- 7. Size: 1 meter 1 meter
- 8. Power: AC220V, 50Hz
- 9. Maintenance and service of the probe station for a period of at least 3 years
- 10. The firm must guarantee technical and service support for the entire system and supply spares for a minimum period of 10 years or more from the installation date.