

INDIAN INSTITUTE OF TECHNOLOGY KANPUR
Samtel Centre for Display Technologies

Enquiry No.: SCDT/FlexE/2015-16/26

Opening Date: January 11, 2016

Closing Date: January 25, 2016

Sub.: Purchase of 200mm Probe station with RF measurement and thermal chuck and temperature unit

Our organization is an educational institute of the repute and liable to get education discount from manufacturer.

Specifications:

- Please see technical specifications and compliance table. Mark, for each line item whether the system quoted by you complies or not.
- Parent company should be an established company with good number of installations and after sales support in India as well: Attach details.
- Vendor must provide 3(THREE)-years onsite warranty for all parts/components and servicing.
- Installation charges and training should be included in the quotation.

Your quotation must reach to us by 10AM on closing date.

Note:

1. Your quotation shall contain Authorization Letter from manufacturer.
2. Quotation must be valid for 90 days.
3. Delivery period should not be more than **12 weeks** and delivery should be at IIT Kanpur.
4. Send complete detail of the product(s).
5. Payments terms: 90% on installation and 10% satisfactory report.
- 6. IITK is exempted from excise/custom duty. Payment can be made in USD for import.**
7. Price must include all taxes and charges.
- 8. All prices are to be FOR IIT Kanpur.**
9. The indenter reserves the right to withhold placement of final order. The right to reject all or any of the quotations and to split up the requirements or relax any or all of the above conditions without assigning any reason is reserved.

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Technical Specifications:

Description of the System:

The system will be used for wafer level DC-IV, CV and RF characterization of semiconductor devices fabricated on 6" and 8" silicon wafers using probe manipulators and/or probe card. The system should have provision for hot/cold chuck to carry out the testing at different temperatures in -60 to 300°C range without vacuum.

1. Base System should include
 - a. Local integrated enclosure for dark, dry and EMI shielded probing
 - b. Front access with roll-out stage for easy wafer loading
 - c. Platen lift mechanism – 5 mm with $\leq 3 \mu\text{m}$ repeatability
 - d. X, Y stage travel: 200mm x 200mm(minimum)
 - e. X, Y resolution: 5mm / turn
 - f. Bearings: Precision cross-roller
 - g. Z stage Probe-force deflection: $\leq 0.0015\mu\text{m}/\mu\text{m}$ slope per 10kg load
 - h. Theta stage travel range: $\pm 5.5^\circ$ (minimum)
 - i. Theta stage resolution: 0.8° / turn
 - j. Interface connector plate:
 - i. Inputs: Compatible to standard triax cables
 - ii. Output: Compatible to Triax or Coax-cables to probe holder
 - iii. Connectors should carry Guard of triax-input to output as a minimum requirement
2. Thermal Chuck
 - a. Configuration: coaxial chuck – 8" diameter
 - b. Temperature range: $\leq -60^\circ\text{C}$ to 300°C
 - c. Temperature resolution: $\pm 0.3^\circ\text{C}$ (with calibrated controller)
 - d. Temperature accuracy: 0.1°C
 - e. Temperature Uniformity: $\leq 0.5^\circ\text{C}@25^\circ\text{C}$, $\leq 2^\circ\text{C}@ -60^\circ\text{C}$, $\leq 2^\circ\text{C}@200^\circ\text{C}$
 - f. Chuck flatness: $\leq 35\mu\text{m}$ (-60°C to 200°C)
 - g. Chuck leakage: $\leq 2\text{fA}$ (thermal controller OFF), $\leq 3\text{fA}$ @ 25°C and $\leq 6\text{fA}$ @ 200°C
 - h. Residual Chuck capacitance: $\leq 2.5 \text{ pF}$

The thermal chuck should work in entire temperature range without the need of vacuum to avoid condensation of samples. The temperature stage should work without use of Liq. N₂ or Liq. He in low temperature range(below 0°C).
3. High Power Microscope:
 - a. Digital imaging system with CCD camera and 20" (minimum) display
 - b. Field of view: 0.07mm x 0.05mm (minimum) and 2.62mm x 1.97mm (maximum)
 - c. Ability to capture images and video
 - d. Resolution: maximum resolution should be below 5 μm
 - e. Preferably a digital system where the same image is magnified without change of objective lens.
 - f. Should have integrated LED illumination.

4. DC Probe Manipulators:
 - a. Total quantity-4 (2 left hand and 2 right hand), additional should be quoted as option
 - b. Magnetic holding on platen
 - c. Feature resolution - 2 μ m or better
 - d. Travel range (X / Y / Z): 12.5 mm / 12.5 mm / 12.5 mm
 - e. Footprint (W x D): 90 mm x 60 mm
 - f. Probe holders (04 nos.) for use with probe manipulators should be supplied. (Corresponding adapters, if needed, should also be included), additional should be quoted as option
 - g. Interface cables from probe holders to prober side of interface connector plates should be included.
 - h. Probe tip material: Tungsten or Tungsten-Rhenium
 - i. Compatible probe tip of ~ 20 μ m tip diameter – 20 nos.
 - j. Probe leakage (Thermal controller OFF): \leq 1fA

5. RF Probe Manipulators:
 - a. Quantity: 2 nos. (one left hand and one right hand orientation)
 - b. Magnetic holding on platen
 - c. Feature resolution: \leq 3 μ m or better
 - d. Travel range (X / Y / Z): 12.5 mm / 12.5 mm / 12.5 mm
 - e. Footprint (W x D): 90 mm x 60 mm
 - f. Optional RF accessories:
 - i. 02 nos. 50Ghz, 48" cable 2.4(F) TO 2.4(M) for angled probe GSG configuration with a pitch of 150 μ m.
 - ii. **Vendor should provide their own RF calibration software.**

6. Necessary basic tool kit for using probe station for different measurements (full capability of the probe station) should be included.
7. Vibration isolation of appropriate size should be included.
8. Any on-site facility or any other requirement should be explicitly mentioned.
9. Only Standard configurations will be accepted. **NO CUSTOM BUILT SYSTEMS WILL BE ENTERTAINED.**
10. Parent company should be an established company with good number of installations and after sales support in India as well. **Attach details.**
11. All the required accessories to be compatible for connection with parametric analyzers like Agilent (Keysight) B1500 (tri-axial) or equivalent.