



INDIAN INSTITUTE OF TECHNOLOGY BOMBAY  
MATERIALS MANAGEMENT DIVISION  
Powai, Mumbai 400076.

Ref. PR No. 1000043444

Rfx. No. 6100001943

Item Description - **Temperature Variant Probe Station with Source Meters**  
**(Qty : 01 No.)**

Sr. No	Item Description	Detailed Technical Specification	Technical Compliance (Yes / No)	Additional Information (if any)
1.	Probe Station	System should have 4 number of probe arms mounted on X-Y-Z translational stages. Each stage should be capable of travelling 25mm on X-Y direction and 25 mm on Z direction with a resolution of 5 micron. Vacuum tight Chamber for heating and cooling with 10 feed thru.		
2.		Probes should be capable of doing the measurements in the frequency range of 40Hz to 10Mhz.		
3.		Temperature range of the measurements is 80K to 480K.		
4.		System will be used to carry out electrical measurements involving CV, IV and pulse IV measurements. Noise level of the system should be as low as possible, preferably of the order of 10nA for the current measurements. Similarly, for the capacitance measurements, system should be designed to have minimum possible parasitic capacitances		
5.		System should have a triaxial chuck of size 2" or more, swappable for low and high temperature measurements with a capability to be electrically biased up to 200V.		
6.		System should be supplied with a temperature controller with all temperature Sensors, Controllers, and indicators. This temperature controller should be capable of measuring the temperature in the range of		

		80K to 480K. Preferably temperature controller should have a PID and overshoot is desirable to be within 1°C		
7.		System should be supplied with a vibration free table. Vibration level of the system should be low enough to carry out the unaffected measurements as mentioned in point4.		
8.		Measurement chamber should have a vacuum >1E - 3mbar. System should be supplied with a suitable vacuum pump with all gauges and control systems to achieve this vacuum level		
9.		Probing chamber should have 2" diameter clear view O-ring sealed quartz window adjusted to ensure clear viewing of the sample area and all the probes with the scope.		
10.		The system should include an integrated high resolution (resolving limit of the order of 1um) imaging system with camera for easy viewing and capable of taking pictures. Optics should facilitate global sample observation as well as zoomed in viewing for final probing.		
11.		Probe contact pads of size as small as 10umx10um, for optics integrated in the system, vibration level of the system and probing tips.		
12.		Vendor to supply at-leas t50 suitable probe tips (Gold coated Tungsten tips of diameter 2 um (20 no), 5um (20 no's), 10 um (10 no's).		
13.		The probe station system must allow integration with standard electrical characterization instruments such as semiconductor parametric analysers and source measurement units		
14.		A High efficiency multi layer shielded flexible transfer line for transferring liquid nitrogen with optimized radiation shielding with basic controller to be supplied		
15.		Dewar for liquid nitrogen of minimum capacity of 50L with liquid nitrogen regulator		
16.		Low vapor pressure thermal anchoring grease		
17.		Warranty: Instrument should be supplied with 1 Year Warranty		

18.		<p><b><u>Important Clause</u></b></p> <p>The vendor should have supplied minimum <b>15 or more DC &amp; RF probe stations and minimum 02 or more manual or Cryogenic probe stations in India</b> to any of the: IIT, IISc, DST autonomous institutes, DRDO labs and ISRO. Purchase order copies of the same must be attached along with technical bid in justification.</p>		
19.	<b>Source Meter</b>	3 No. Source Meter Units Sensitivity with 20 mV & 10 nA Source/measure ranges		
20.		4 No. Low Noise Triax Cables		
21.		2600TRX Interface with prober		
22.		License; Characterizer App Software; Perpetual Option; Floating		
23.		Note : The vendor should quote for the Probe Station & Source Meter units together since it is single equipment setup.		