Department of Electrical Communication Engineering
Indian Institute of Science, Bangalore 560012, India

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03 June 2019

To Whom It May Concern

This is a Request for Quote (RFQ) for procurement of a **variable temperature electrical probe station** (referred to as **equipment** in the RFQ) at the Department of Electrical Communication Engineering (ECE), Indian Institute of Science, Bangalore.

To the extent possible, the equipment price should be broken up into as many individual components as possible. This aids price comparison on commercial bids.

All interested vendors shall submit a response demonstrating their capabilities to produce the requested equipment to the Primary Point of Contact listed below.

Direct all questions concerning this acquisition to **Dr Kausik Majumdar** at **kausikm@iisc.ac.in**.

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Procedure:

1. Vendors will be required to submit a technical proposal and a commercial proposal in **two separate envelopes**.
2. The deadline for submission of proposals is the **24th June 2019, 5 pm**. Proposals should arrive at the office of **Dr. Kausik Majumdar, Department of Electrical Communication Engineering, Indian Institute of Science, India, 560012** by the above deadline.
3. The technical proposal should contain a compliance table that should describe your compliance in a "Yes" or "No" response against each of the items in the table listed in this RFQ. **If "No" the second column should state the extent of deviation. The "third" column should state the reasons for the deviation if any.** The fourth column can be used to compare your tool with that of your competitors or provide details as requested in the technical requirements table below.
4. Items in addition to that listed in the technical table that you would like to bring to the attention of the committee can be listed at the end of the compliance table.
5. **Vendors are encouraged to highlight the advantages of their tools over comparable tools from the competitors.**

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Technical Requirements: Please note that the requirements listed below are only guidelines. It does not disbar tools that do not meet the criteria listed. Vendors are requested to quote for tools that meet the criteria to the best extent possible and list deviations. Deviations are NOT an automatic reason for disqualification. They will be discussed by the technical committee prior to making an informed decision.

Tool Name: Variable temperature electrical probe station
1. Cooling: Closed cycle dry system is being sought for. 2. Temperature: Sample temperature < 10 K (Preference will be given to the vendor achieving lower sample temperature) when sample and all other probes are loaded. Max. temp: The maximum sample temperature achievable should be >350 K. 3. Cool down time: less than 3 hours to reach the least sample temperature from room temperature. 4. Temperature controller and sensors: All required temperature controllers must be included in the quotation. The total number of temperature sensors, and their locations must be clearly mentioned (for example, probe arm, sample stage, CCR second and first stage, radiation shield). 5. Vacuum and pump: The chamber should reach a vacuum better than 10^{-6} torr. The turbo pump should be added in the quote. Appropriate vibration isolation should be provided. 6. Sample stage: Sample stage should be big enough to hold a sample > 1inch diameter. 7. Vibration isolation: Appropriate vibration isolation should be present to minimize x-y and z vibration. x-y peak to peak vibration should be less than 1 micrometer, and z vibration should be less than 50 nm. Please provide a frequency response of the x-y and z sample vibration. 8. Optical microscope: An optical microscope should be provided for sample viewing with a minimum zoom of 7:1, along with sample illumination, CCD camera and a monitor. 9. Probes and manipulator: A. Four electrical probes should be provided, with appropriate micromanipulators.

B. One fiber optic probe is required with wavelength range from 400 nm to 1800 nm or better.

C. There should be provision for additional port to add one extra probe in future.

D. The micromanipulators should have a minimum of 1 inch x-y travel.

E. All probe arms should have appropriate shielding, and appropriate cryogenic cables should be added in all the electrical probes.

F. Probe-tips should be provided along with spares.

G. The probes should be designed for ultra-low current measurement and so equipped with triax.

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Clauses	
1.	Please include options currently available that can be added on in the future.
2.	**Training and Installation:** Onsite installation and training should be quoted.
3.	**Warranty and AMC:** Warranty period and cost of AMC beyond warranty period should be included in the commercial bid.
4.	Please include standards to be used for calibration of tool parameters.
5.	**The cost of shipping up to CIP Bangalore should be included. IISc will help with customs clearance at Bangalore Airport. Please include your payment option.**
6.	Please list a set of acceptance tests for on-site (vendor) inspection and after installation at IISc.
7.	Spares for up to one year should be included.
8.	The delivery time should be indicated in the quote.
9.	A set of basic tools required for performing routine maintenance. A tool cart that can be locked and that can accommodate these tools should be provided.
10.	The payment terms will be specified in the commercial proposal and is subject to negotiation.
11.	Please provide details of the number of trained personnel in India, number in the southern region or in Bangalore who can service the machine.

On behalf of the technical committee,

Kausik Majumdar
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Department of Electrical Communication Engineering
Indian Institute of Science
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