



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

14 May 14, 2019

To Whom It May Concern

This is a RFQ (Request for Quote) for procurement of a **Semiconductor parameter analyzer** (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 **4th 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.**



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: Semiconductor parameter analyzer

A. General features: The equipment should have the following general features:

- PC based instrument with single box solution for current-voltage (I-V), and pulse generation (Fast IV) capability.
- GPIB, LAN port for instrument control.
- Self-test, calibration and diagnostic
- High speed, High resolution ADC.
- All cable, connector and appropriate accessories required for this system.

B. The equipment should have following sourcing and measurement capabilities:

1) I-V capability: 4 numbers of SMUs are required with the following criteria:

Voltage:

- Voltage Source and measure capability: ± 200 V
- Ranges: 200 mV to 200V or better
- Source resolution: 5 μ V or better
- Measure resolution: ± 200 nV or better

Current:

- Max Current Source and measure capability: ± 100 mA
 - Current ranges: 1 pA to 100mA or better
 - Min Source resolution: 1.5 pA or better
 - Min Measure resolution: ± 100 aA or better

2) All SMUs should provide voltage/current in Bias; Common; Sweep; List sweep (custom point-by-point user-defined sweep); Step mode.

3) SMU should be able to apply pulse in ms range.

- 4) Pulse capability: The equipment should have pulsing unit with the following criteria:
- Dual channel Pulse Generation & Measurement capability.
 - High Speed Voltage Outputs with Pulse widths ranging from <80 nanoseconds to DC
 - System should able to generate at the least +/- 35V amplitude pulse simultaneously on both channels.
 - System should have current measurement facility
- 5) System should have built in Capability to switch the measurements from IV to Pulsed IV from select menu without changing the connections on the DUT and should be supported for future CV upgrade.
- 6) System should be provided with bellow accessories
- a) BNC FEMALE to BNC female connector: 4 no
 - b) TRX male to BNC female connector: 4 no
 - c) 2-SLOT M BNC TO 3 LUG F TRIAX: 4 no
 - d) TRX FEMALE to TRX female connector: 4no
- 7) System should have Kelvin connection at GND unit.
- 8) System should have feasibility to write different customized test routine for hardware configuration. System should have facility to modify or write user test modules.
- 9) Provided software should have parameter extraction facility.
- 10) Preference will be given to vendors with repair, maintenance and upgradation facility in India.

C. The system should have a minimum of 3 years of warranty.



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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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