



Date: 17<sup>th</sup> March 2021

## **Local Tender (India based vendors only)**

### **To Whom It May Concern**

This is an RFQ (Request for Quote) for procurement of a benchtop spectrometer system with accessories as part of a limited tender for the Centre for Nano Science and Engineering (CeNSE) at IISc, Bangalore. The spectrometer system would be used to study the absorption, luminescence and lifetime properties of thin-film semiconductors and their optoelectronic devices.

CeNSE is a multidisciplinary research department at IISc that houses a 14,000 sq. ft. cleanroom and characterisation facility used by 50 faculty members from various disciplines at IISc. CeNSE also runs a program called Indian Nanoelectronics Users Program (INUP) which has allowed 4200 participants from more than 700 universities and institutes all over India to use the facilities at CeNSE. Consequently, any tool in 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 and INUP program can be gleaned from:

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

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

### **A. Procedure:**

1. Quote should come only from Indian 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**. Only vendors who meet the technical requirement will be considered for the commercial negotiation.
3. The Bidder should belong to either class 1 or class 2 supplier distinguished by their “local content” as defined by recent edits to GFR. They should mention clearly which class they belong to in the cover letter.
  - a. Class 1 supplier: Goods and services should have local content of equal to or more than 50%.
  - b. Class 2 supplier: Goods and services should have local content of equal to or more than 20 % and less than 50%.
4. Purchase preference as defined by the recent edits to GFR (within the “margin of purchase preference”) will be given to Class-1 supplier.
5. MSME can seek exemption to some qualification criteria. IISc follows GFR2017 for such details



6. Separate detailed justification needs to be given to substantiate the qualification as Class 1 and Class 2 suppliers and the intender reserves the right to cross-check the factual validity of the same and one if some foreign parts or equipment is being put forward then please submit the “*bill of material*” details for the same for evaluation.
7. The deadline for submission of proposals is **06<sup>th</sup> April 2021, 5:30 pm** Indian Standard Time. Bids should arrive at the office of **Prof. Aditya Sadhanala, FF-05, Centre for Nano Science and Engineering, Indian Institute of Science, Bangalore 560012**, India, by the above deadline.
8. The technical proposal should contain a technical compliance table with 5 columns.
  - a. The first column must list the technical requirements, in the order that they are given in the technical requirement below.
  - b. The second column should provide specifications of the instrument against the requirement (please provide quantitative responses wherever possible).
  - c. The third column should describe your compliance with a “Yes” or “No” only. Ensure that the entries in column 2 and column 3 are consistent.
  - d. The fourth column should state the reasons/explanations/context for deviations, if any.
  - e. The fifth column can contain additional remarks from the OEM. You can use this opportunity to highlight technical features, qualify response of previous columns.
9. Vendors are encouraged to highlight the advantages of their tools over comparable tools from the competitors
10. If multiple systems can fulfil the requirements, vendors can submit multiple bids.
11. In the commercial bid, please provide the itemised cost of the system and required accessories, such as software, power supply, etc.
12. As an option, please provide itemised cost 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.
13. In the quote, you are requested to provide itemised cost for spares expected over 2 years of use.
14. Please indicate the warranty provided with the tool.
15. The quotations should be on FOR-IISc Bangalore basis in INR only. Since IISc is DSIR registered organization, hence it is eligible for GST rate @5% as the equipment is required for research purposes only.
16. Any questions or clarifications can be directed to:  
Prof. Aditya Sadhanala,  
FF-05, Centre for Nano Science and Engineering,  
Indian Institute of Science, Bangalore 560012  
[sadhanala@iisc.ac.in](mailto:sadhanala@iisc.ac.in)

## B. Terms and Conditions

1. The decision of purchase committee will be final



2. The vendor is responsible for the installation of the system at the IISc campus.
3. The RFQ must include references of 5 previous installations, preferable in India. Please provide the names and contact addresses of the referees, so that the committee can contact them independently. Details of such systems with model numbers and users should be provided. The reference letters can be used to disqualify vendors with poor track record of service, build quality, system performance, or poor availability of spares.
4. The vendor must also submit a list of 50 customers where similar systems have been installed.
5. Clarify if periodic (preventive) maintenance be done by a trained on-site engineer or requires a specialist from the OEM. The vendor should have qualified technical service personnel for the equipment based in India and must assure a response time of <2 business days after receiving a service request.
6. The lead-time for the delivery of the equipment should not be more than 2 months from the date of receipt of our purchase order.
7. 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.
8. Wherever requested in this specifications sheet, data must be supplied along with technical compliance documents. Technical bids without supporting data will be deemed as technically non-compliant.
9. All guaranteed specifications will have to be demonstrated, upon request, in an active installation. Failure to demonstrate any promised specifications will be deemed as technical non-compliance.
10. Printed literature and published papers in support of all compliance to the prescribed specifications may be provided.
11. Technical evaluation by the institute may include demonstration to verify functionalities and capabilities of the system quoted. Any discrepancy between the promised specifications and demonstrated specifications will be deemed as technical non-compliance. If need arises, the vendor must be ready to physically visit IISc for a techno commercial discussion.
12. The **validity of commercial quotation should be at least 60 days** from the last date for the submission of tender documents.
13. 100% payments will be released after completion of delivery and satisfactory installation subject to TDS as per rules. As per GFR no advance payment can be made to domestic vendors, unless an equal amount of bank guarantee is provided.

## Technical Requirements:

<p>1. <b><u>Spectrometer:</u></b></p> <p><b>Wavelength range covered:</b> 230nm to 1700nm by using one or two photon multiplier tube (PMT) based fast detectors. <i>Minor (up to <math>\pm 30</math>nm) deviation/gap in the wavelength coverage would be acceptable but, this needs to be clearly mentioned.</i> If the system needs a monochromator for wavelength selection then it should be a high sensitivity, stepper-motor driven and computer controlled.</p> <p><b>Should have a modular design making it compatible with a variety of lasers, detectors and sample holders.</b></p> <p><b>Steady State Detection capabilities required:</b></p> <p>a) Emission spectra, point-wise intensity and polarization measurements.</p> <p><b>Fast Kinetics have to be strictly measured/computed using frequency domain methods and should have the following capabilities:</b></p> <p>a) Lifetime should be measurable at least from 50ps and at most up to 100ms using the same electronics</p> <p>b) For a routine lifetime measurement the entire measurement should be done quickly (within 1-2 seconds)</p> <p>c) PMT should have adjustable gain</p> <p><b><u>Accessories</u></b></p> <p><b>All potential accessories should be listed separately. However, this should include the following:</b></p> <p><b>A) Sample Holder:</b> Two-cuvette, computer-controlled sample compartment with flow through system for temperature control, dry gas purge, and two variable-speed, computer-controlled magnetic stirrers.</p> <p><b>B) Set of two Glan-Thompson polarizers</b> having 10x10 mm aperture and 214nm - 2300 nm wavelength range.</p>
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	<p><b>C) A Portable High Pressure Cell System specifications:</b></p> <p><b>Cell Pressure:</b> Should be variable (manual or automatic adjustment) and reach at least 3000 bar with 4 optical windows in place.</p> <p><b>Cell Temperature Range:</b> Should be easily controllable in -20 °C to 50 °C range.</p> <p><b>Cell Thermal Conductivity:</b> Should be 10 W cm<sup>-1</sup>K<sup>-1</sup> at 20 °C</p> <p><b>Cell Windows:</b></p> <ol style="list-style-type: none"><li>1. 2 x Quartz</li><li>2. 2 x Sapphire</li><li>3. 2 x MgF<sub>2</sub></li><li>4. Each window should have a 1 cm<sup>2</sup> effective opening</li><li>5. Transmission range at least cover 200 nm - 2000 nm spectral range</li></ol> <p><b>Internal Cell Chamber:</b></p> <ol style="list-style-type: none"><li>1. Diameter of 2 cm</li><li>2. Height of 5 cm</li></ol> <p><b>Cell Body External Dimensions:</b></p> <ol style="list-style-type: none"><li>1. 9 cm wide x 9 cm deep</li><li>2. 4 cm from base to window centers</li></ol> <p><b>Electrical Connector:</b> Need at least two terminal device measurement capability</p> <p><b>Pressurising pump:</b> Pressure cell should come along with a compact, manual or automatic pressure pump and pressure gauge.</p>
4.	<p><b>Utilities:</b> Please mention all the non-electrical utilities required to use the system, including cooling water, compressed air, inert gas, etc., along with their consumption. <b>Systems with minimal consumption of non-electrical utilities would be chosen subject to the above mandatory requirements being satisfied.</b></p>



5.	<b>Footprint:</b> A compact system is required that can be easily accommodated in a research laboratory as a benchtop instrument. Please mention the system dimensions that you intend to supply.
6.	<b>User Interface:</b> The system should be highly automated and preferably be in a plug-and-play condition at delivery. Additionally, the system should be controllable by a generic external computer via USB, or RS232, or RS485, or ethernet or any such interface. Command set for this control must be included with the system.
7.	<b>Regular Maintenance:</b> The system should require minimal maintenance. Any regular maintenance (optical alignment, calibration, cleaning, etc.) needed to keep the instrument in good working conditions should be clearly mentioned. The cost of this regular maintenance (if requiring additional consumables or spare parts) for 2 years should be quoted separately as “maintenance contract”.
8.	<b>Power:</b> The instrument should work at 220-240V 50 Hz AC power. If the system runs on DC power, please include the price of a suitable AC-DC power adapter. <b>Please mention AC power consumption.</b>
9.	<b>Operating Conditions:</b> The system must function year-round in Bangalore conditions, i.e. the ambient temperature of 10-40 °C and relative humidity of 30-95%.
10.	<b>Local Support:</b> Please mention if the system will be supported by a local distributor. <b>A Bangalore based vendor who can quickly respond to issues will be preferred.</b>
11.	<b>References:</b> Please provide a list of up to 3 references of users in India. Include contact numbers so that the purchase committee can contact the referees directly. The referees must be customers of the same or very similar spectrometers. These referees must be able to comment on the system's capability, robustness, and usability. They will also be asked about the quality of service support. Poor reviews by referees may result in disqualification of the bid..

Thank you,

Aditya Sadhanala