

Tender Details

Tender No: SCL/PS2/2018E0109501

Tender Date: 23/07/2018

Purchase Entity: Purchase& Stores

Tender Notice

E-Procurement Tender No. SCL/PS/2018E0109501 dated July 24, 2018, SEMI-CONDUCTOR LABORATORY [SCL] invites ONLINE offers in TWO part system through e-tender portal <https://eprocure.isro.gov.in> for Supply, Installation and Commissioning of High Resolution X-Ray Diffractometer (HRXRD). Tender Documents can be downloaded from July 25, 2018 -1701 hrs. to August 27, 2018 upto 1100 hrs. The vendors need to get enrolled in the e-tender portal to access tender and submit their offer online. Vendors need to have Digital Signature Certificate as detailed on our e-portal and corporate e-mail ID to register on the above portal. Only online tenders will be accepted. No Manual/Postal/courier/e-mail/fax tender will be entertained. Please note Tender fee shall not be applicable for tenders submitted on-line through this portal.

Vendors interested to participate in this e-Tender are required to register themselves as vendors, if not already registered, in our e-procurement portal <https://eprocure.isro.gov.in> by downloading plugins and help demos listed on the home page of the e-procurement link mentioned above to complete the vendor registration process. They can seek help from help desk +91 20 2531 5555/ Mobile No.91679 69601 (Email: support.isro@nextenders.com) also the home page of e-procurement portal may be accessed for any technical help for registration and subsequent process. Vendors may please note that without registering in our E-procurement portal they will not be able to quote for this tender.

Tender Attachments

Technical Write-up/Drawings

Attachment - I:

IDT0018270000000000isro05401.pdf

Attachment - II:

Attachment - III:

Attachment - IV:

Attachment - V:

Instructions to Tenderers (PT)

1. Interested tenderers may, at their option, login to <http://eprocure.isro.gov.in> and submit offers as per details in the tender notification.
2. This being two part Tender-Technical and Commercial parts separate, the bidder should not attach any document(s) containing pricing information alongwith Technical Part. The tenders containing price information in Technical Part will be treated as unsolicited offers and rejected. Prices should be indicated in the Price Bid format only .
3. Request for the extension of the due date will not be considered.
4. SCL reserves the right to accept or reject any/or all the tenders in part or full without assigning any reasons thereof. The bidder is at liberty to seek information related to bidding conditions, bidding process and/or rejection of its bid.
5. In this tender either the Indian Agent on behalf of the Principal/OEM or the Principal/OEM itself can bid, but both cannot bid simultaneously for the same item. Indian agents while quoting on behalf of their principals shall provide necessary latest authorization letter obtained from their Principals/Manufacturers in their bid.
6. If an agent submits bid on behalf of the Principal/OEM, the same agent shall not submit a bid on behalf of another Principal/OEM in the tender for the same item. If submitted, all offers submitted by the said agent shall be excluded from the procurement process.
7. Bids submitted other than EGPS mode shall not be considered..
8. SCL reserves the right to verify all claims made by the bidder.

9. SCL reserves the right to change any milestone date of the tendering activity / tender schedule.
10. Tender which is not submitted in terms of instructions mentioned herein is liable to be rejected.
11. If tender opening date happens to be a public holiday, tender will be opened on the next working day and interested bidders may depute their representatives to attend the Tender Opening, with proper authorization.
12. The purchaser shall be under no obligation to accept the lowest or any tender and reserves the right of acceptance of the whole or any part of the tender or portions of the quantity offered and the tenderers shall supply the same at the rates quoted.
13. It is expressly agreed that the acceptance of the Stores Contracted for is subject to final approval in writing by the Purchaser.
14. It is to be noted that the drawings, specifications, end-use, etc., given by the purchaser, are confidential and shall not be disclosed to any third party.
15. Prices are required to be quoted according to the units indicated in the Price bid. When quotations are given in terms of units other than those specified in the tender form, relationship between the two sets of units must be furnished.
16. The quote should indicate quantity wise unit rate separately which have to be Price bid. The Prices are to be mentioned both in figures as well as in words. The taxes, duties etc. are to be calculated and indicated in the column provided in online forms explicitly.
17. Bidders are expected to comply with commercial and other terms and conditions given in vendor specified terms of this tender. In case of any deviation, the reasons thereof should be clearly specified in the vendor specified terms column.
18. All available technical literature, catalogues and other data in support of the specifications and details of the items should be furnished along with the offer.
19. Specifications: Stores offered should strictly confirm to our specifications. Deviations, if any, should be clearly indicated by the tenderer in his bid. The tenderer should also indicate the Make/Type number of the stores offered and provide catalogues, technical literature and samples, wherever necessary, along with the quotations. Test Certificates, wherever necessary, should be forwarded along with supplies. Wherever options have been called for in our specifications, the tenderer should address all such options. Wherever specifically mentioned by us, the tenderer could suggest changes to specifications with appropriate response for the same.
20. The tenderer would provide, the name of his bankers as well as the latest Income-Tax clearance certificate duly countersigned by the Income-Tax Officer of the Circle concerned under the seal of his office, if required by the Purchaser during evaluation of tender.

21. Subletting and Assignment: The contractor/supplier cannot sublet, transfer or assign the order/Contract or any part thereof or interests therein or benefit or advantage thereof in any manner whatsoever, to any other party save with the previous written consent of the purchaser. Such consent by the purchaser, however, shall not relieve or discharge the contractor/supplier from any obligation, duty or responsibility under the Purchase Order/ Contract.

22. The contractor/supplier shall indemnify the purchaser against Workmen Compensation Act.

23. The authority of the person submitting the tender, if called for, should be produced.

24. The bids shall be opened on 1st day of opening schedule as indicated in the Tender Notice in the presence of the bidders/their authorized representatives who may like to attend the tender opening against presentation of Authorization letter.

Due to any breakdown in server/link, bid opening will be continued on the following dates. The schedule of opening of Price bids shall be intimated separately to the technically qualified bidders only.

25. PROCEDURE FOR EVALUATION OF TENDERS:

Technical Evaluation Criteria:

Vendor meeting the eligibility criteria and basic technical specifications mentioned in SCL Tender shall be considered to be technically qualified.

Evaluation of Price Bids

The following elements shall be considered for evaluation of Priced Commercial offer:

a. Price quoted by the bidder in the price bid template for meeting the functionalities given in the Tender and Technical Specifications sheet. Bid shall be evaluated on overall cost basis. AMC charges and recommended spares & consumables charges sought in this tender shall not be taken into account for evaluation of price bid.

b. Compliance with the Payment Terms prescribed in this tender document. In the event, the bidder offers Payment Terms stringent than SCL prescribed Payment Terms, the bid of the bidder shall be loaded based on Base Rate of SBI prevailing on the date of opening of price bids.

c. In the event of the bidder requiring SCL to bear bank charges outside India (foreign bank charges), the bidders bid shall be loaded at the rate 0.5percent of the value towards bank charges outside India.

26. The bid should contain the following information:-

a. Agency Commission: Bidders are required to provide the following information in respect of their authorised Indian Agent, if any, alongwith technical bid as the same is mandatory as is required for consideration of the bid. Name, Address, Telephone no. , fax no., email of the Indian Agent including the contact person. A letter from the Manufacturer/supplier in the current date certifying that the said Indian Agent is their authorised Indian Agent and also indicating the responsibilities/role of the Indian

Agent under the proposed purchase. Remuneration/service charges payable to the Indian Agent under the proposed purchase. The amount of agency commission included in the price and payable to Indian Agent of the contractor shall be paid directly to the Indian Agents by the Purchasers in equivalent in Indian rupees on the basis of an invoice from him applying TT buying rate of exchange ruling on the date of placement of the Purchase Order and which shall not be subject to any further exchange variations. The payment will be released to the Indian Agents within 30 days from the date of acceptance of the goods.

b. Recommended spares for satisfactory operation for a minimum period of one year.

c. Details of any technical service, if required for erection, assembly, commissioning and demonstration.

27. The FOB/FCA prices quoted should be inclusive of all taxes, levies, duties arising in the tenderer country.

28. The details of Import License if any, will be furnished in the Purchase Order.

29. Instruction/operation manual containing all assembly details including wiring diagrams should be sent wherever necessary in duplicate. All documents/correspondence should be in English Language only.

30. Part shipment is not allowed unless specifically agreed to by us.

31. RECOVERY OF SUM DUE:

Whenever any claim for the payment of, whether liquidated or not, money arising out of or under this Contract against the Contractor, the purchaser shall be entitled to recover such sum by appropriating in part or whole, the security deposited by the Contractor, if a security is taken against the Contract. In the event of the security being insufficient or if no security has been taken from the Contractor, then the balance or the total sum recoverable as the case may be, shall be deducted from any sum then due or which at any time thereafter may become due to the Contractor under this or any other Contract with the purchaser. Should this sum be not sufficient to cover the full amount recoverable, the Contractor shall pay to the purchaser on demand the remaining balance due. Similarly, if the purchaser has or makes any claim, whether liquidated or not, against the Contractor under any other Contract with the purchaser, the payment of all moneys payable under the Contract to the Contractor including the security deposit shall be withheld till such claims of the purchaser are finally adjudicated upon and paid by the Contractor.

32. PACKING:

a) The Contractor wherever applicable shall pack and crate all stores for sea /air/road shipment as applicable in a manner suitable for export to a tropical humid climate, in accordance with internationally accepted export practices and in such a manner so as to protect it from damage and deterioration in transit by road, rail, air or sea. The Contractor shall be held responsible for all damages due to improper packing.

b) The Contractor shall ensure that each box / unit of shipment is legible and properly marked for correct identification. The failure to comply with this requirement shall make the Contractor liable for additional expenses involved.

c) The Contractor shall notify the purchaser of the date of shipment from the port of embarkation as well as the expected date of arrival of such shipment at the designated port of arrival.

d) The Contractor shall give complete shipment information concerning the weight, size, content of each packages, etc.

e) Trans-shipment of equipment shall not be permitted except with the written permission of the purchaser.

f) Apart from the despatch documents negotiated through Bank, the following documents shall also be airmailed to the purchaser within 3 days from the date of shipment:

i) Air Way Bill (Two non-negotiable copies)

ii) Invoice (3 copies)

iii) Packing List (3 copies)

iv) Test Certificate (3 copies)

v) Certificate of Origin, wherever applicable.

The Contractor shall also ensure that one copy of the packing list is enclosed in each case.33. SECURITY INTEREST:

On each item to be delivered under this Contract, including an item of work in progress in respect of which payments have been made in accordance with the terms of the Contract, purchaser shall have a security interest in such items which shall be deemed to be released only at the time when the applicable deliverable item is finally accepted and delivered to the purchaser in accordance with the terms of the Contract. Such security interest of the purchaser shall constitute a prior charge as against any other charge or interest created in respect of such items by any entity.

34. INDEMNITY:

The Contractor shall warrant and be deemed to have warranted that all Stores supplied against this Contract are free and clean of infringement of any patent, copyright or trade mark and shall at all times indemnify the purchaser against all claims which may be made in respect of stores for infringement of any right protected by Patent, Registration of design or Trade Mark and shall take all risk of accident or damage which may cause a failure of the supply from whatever cause arising and the entire responsibility for the sufficiency of all the means used by him for the fulfilment of the Contract.

35. COUNTER TERMS AND CONDITIONS OF SUPPLIERS:

Where counter terms and conditions/printed or cyclostyled conditions have been offered by the supplier, the same shall not be deemed to have been accepted by the purchaser unless specific written acceptance thereof is obtained.

36. CONTRACTORS DEFAULT LIABILITY:

The purchaser may upon written notice of default to the Contractor terminate the Contract in whole or in part in circumstances detailed hereunder:

- a) If in the judgement of the Purchaser the Contractor fails to make delivery of Stores within the time specified in the Contract/agreement or within the period for which extension has been granted by the Purchaser to the Contractor.
- b) If in the judgment of the Purchaser the Contractor fails to comply with any of the other provisions of this Contract.

Bid Templates

HRXRD Specifications-I

Item Specifications -I

Sl. No	Specifications	Compliance (Yes /No)	Offered Specifications	Remarks
1	1.00.0 SCOPE OF WORK:Vendor's scope of work shall cover supply, installation & commissioning of High Resolution X-ray Diffractometer (HRXRD) system with all necessary hardware and software for Group III-V compound semiconductor based epi-layers. The scope of work shall include the following: <ul style="list-style-type: none">• Installation of the tool and support equipment, including all utility connections.• Commissioning of the tool and demonstration of its			

	<p>functionality as per the required specifications. • On-site training to concerned SCL personnel on operations, maintenance & trouble shooting of the tool. It is not the intent of this document to completely specify all details of design and construction. Nevertheless, the systems shall conform in all respects to high standards of engineering, design and workmanship and shall be capable of performing the operations in a safe and efficient manner as per industry codes.</p>			
<p>1.01.00 ELIGIBILITY CRITERIA: Only those parties are eligible to participate in the tender who have experience in the manufacturing and maintenance support of High Resolution X-Ray Diffractometer (HRXRD)</p>				

<p>system in semiconductor industry or advanced R&D labs working in compound semiconductor technology. The offered tool shall be standard system of the vendor. Vendor shall have supplied similar system to semiconductor industry or advanced R&D labs in last 7 years. Vendor shall provide the list of clients around the globe.</p>				
<p>1.02.00SCOPE OF SUPPLY:1.02.01 Vendor shall supply the tool, including support tools viz. X-Ray source, Parallel beam primary optics, Sample stage, Goniometer, Detector secondary optics as per the Technical Specifications (Refer clause 3.00.00).1.02.02 Standard samples along with software (if required) for periodic calibration of</p>				

<p>the High Resolution X-Ray Diffractometer (HRXRD) system shall be provided by the vendor.1.02.03 Vendor shall supply all the auxiliary items like interconnect matching cables for electrical connections; interconnect fittings, vacuum line etc. for support tool installations; foundation pads/bolts, clamps, etc. as may be required to complete the installation and commissioning of the tool.Any items not specifically mentioned in the specifications but required for safe and efficient operations of the system shall deemed to be included in the scope of supply of the vendor unless explicitly indicated in the bid by the vendor.</p>				
<p>1.03.00SCOPE OF INSTALLATION AND COMMISSIONING:1.03.01</p>				

<p>It will be the responsibility of the vendor to ensure proper installation & commissioning of the tool at SCL. All interconnects for tool and subsystems shall be done by vendor.1.03.02 Vendor shall provide guidelines for preparation of installation site. 1.03.03 Vendor shall also supply the installation drawings giving detailed information regarding the port size & type for the utility connections. 1.03.04 Vendor shall uncrate the tool, move the same to the respective area (s) and install the tool on foundations. SCL will provide utilities hook-up up to the tool.1.03.05 Vendor shall bring all necessary tools/instruments that may be required for successful commissioning/ installation/ verification of the tool and sub tools of</p>				
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<p>the tool. NOTE: All utility connections shall be from top of the tool.</p>				
<p>1.04.00 TRAINING:1.04.01 During commissioning of the tool vendor shall provide on-site hands-on training to the concerned SCL personnel on operations/process, application software, related applications, trouble-shooting and preventive maintenance of the tool supplied. The training shall be extensive (at least for five days) enough so that quick diagnostics of problems and remedial actions is possible at SCL.</p>				

HRXR Specifications-II

Item Specifications -II

Sl. No	Specifications	Compliance (Yes /No)	Offered Specifications	Remarks
2	<p>2.00.00 ACCEPTANCE PROCEDURE:2.00.01</p> <p>Vendor shall share the acceptance criterion with the technical bid. Vendor shall demonstrate accuracy of the measurement and calibration procedure with standard samples. SCL shall have the option for pre-shipment inspection at vendor's premises. Final acceptance, however, will be done after installation and demonstration of the functionality of the tool, as per mutually agreed acceptance procedure.</p> <p>Vendor shall provide factory acceptance test report and measurement certificate for the High Resolution X-Ray Diffractometer (HRXRD) system.</p>			
3	3.00.00 TECHNICAL			

	<p>SPECIFICATIONS:Following are the detailed technical specifications of the required system. Vendor has to provide complete information as required in various sections for proper evaluation of the system. The statements in the compliance sheet shall be supported by relevant documents/brochures.</p>			
<p>3.00.01 HRXRD system must have the following measurements capabilities-• Tool shall be capable of measuring structure information (composition, thickness, superlattice period) and the defects in structures (mismatch, relaxation, misorientation, dislocation density, curvature) of Group III-V based epi-layers (InGaAs, GaAs, InAs, AlGaAs) on GaAs/Si/SiC wafer and Group III-Nitrides epi-layers on</p>				

<p>GaAs/Si/SiC wafer of size up to 150mm diameter. • Tool shall be capable of measuring above mentioned properties for SiGe, SiGeC (Alloy) on Si wafer. • Tool shall be capable of measuring Reciprocal Space Mapping (RSM) and Rocking Curve (RC) of symmetric and asymmetric peaks measurements. • Dynamical simulation and fitting software for plotting wafer maps, reciprocal space maps, pole figure, rocking curves and any other data that requires a 2D or 3D surface plots. • Ability to move the detector and the sample independent of each other, providing a true multi-modal measurement system capable of measuring couple scan, Omega-Theta scan, Omega-2Theta scans and grazing incidence</p>				
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<p>measurements. • Tool shall be capable of mapping full area up to 150mm diameter wafer without manual shifting of the wafer sample.</p>				
<p>3.00.02 X-Ray Generator: a) Power: 3kW or more, Voltage: 20-50kV or better and current: 10-60mA or better, adjustable in steps of 1kV and 1mA steps respectively b) Operating Power: 1.5kW-2.2kW (including in between ranges also) c) Material: Cu with suitable Beta filters d) Type: without rotating anode e) Advanced generator with convenient cooling in compact chassis. f) X-ray Generator must have efficiency greater than 85% and high stability (less than 0.01% for high voltage and current over long hours of operation with 10% variation in the mains</p>				

<p>supply)g) It shall be controlled by software for features such as ramping of power, standby modes. It must be free from any undesirable electromagnetic noise h) Ceramic based Long-Fine Focus (LFF) sealed Cu X-ray tube with standard safety interlocksi) Cooling system: Suitable water Chiller (Vendor to specify the specifications of the chiller) j) The size of X-ray beam spot shall be less than or equal to 0.4mm x 12mm. It shall have flip focus functionality between line and point focus/toll free method or any other standard feature for flipping between line & point focus and vice versa without any need for taking out/realignment of the X-ray tubek) Instrument must include safety enclosure, featuring safety interlocks/fail-safe</p>				
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control, compliant with X-ray radiation safety standards.				
<p>3.00.03 X-ray beam Optics:</p> <p>a) Automatic alignment and switching over from Bragg-Brentano/any other mirror arrangement to parallel high resolution optics with a combination of multilayer mirror, motorized slits, roller collimator and 2-bounce Ge (220) monochromator (4 bounce Ge (220) monochromator also be provided) for focused, parallel and high resolution and high intensity K-Alpha1 beam.b) This primary optics for HRXRD shall be capable of complete removal of K-Alpha2 radiation.c) Optics shall have an option to utilize either mirror, motorized slit and monochromator independently and also in</p>				

<p>combination to each other through software controlled.d) The offer shall include a comparative table that incorporates the different combinations of mirror, motorized slit and monochromator available and their effect on the beam intensity (cps) and resolution in deg/arcsecs.e) Beam optics alignment and control to choose the above mentioned options shall be completely automatic and software controlled.f) Motorized variable divergence slits in the primary side and motorized variable receiving, antiscatter/detector slit on the other sideg) A schematic drawing of the incident beam side optics showing the various components in the beam path shall be provided at</p>				
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<p>the time of bidding.h) Secondary optics on diffracted beam side for rocking curves and 2-bounce high resolution analyzer crystal Ge (220) for high resolution reciprocal space maps shall be provided.i) Selection and operation/alignment of primary & secondary optics shall be possible through software only.</p>				
<p>3.00.04 High Resolution Goniometer: a) Type: High resolution Horizontal/Vertical goniometerb) Geometry: Theta-Theta geometry. Also have the measurement capability of working in Theta-2Theta modec) Radius: 300mm or more (Preferably variable)d) Working Mode: Coupled as well as in decoupled/independent mode e) Scan Capability:</p>				

<p>Omega scan, Theta scan, coupled scan with high angular resolution (as mentioned in (f),(g),(h)and (i)) on theta to detect the narrowest possible peaks from epi-layers. f) Theta range: -90deg to +120deg or better g) 2-Theta range: -40deg to +160deg or better h) Minimum step size: for Omega is 0.0001deg and for 2Theta is 0.0001deg i) Reproducibility: 0.0006deg for high resolution.j) Drive: Independent drives for Omega and 2Theta for the accurate positioning as well as linked Omega-2Theta axis. k) Angular uncertainty from the gear backlash shall be avoided using appropriate optical encoders</p>				
<p>3.00.05 Sample Stage:a) A robust sample stage (Horizontal/Vertical) for stable and clean mounting</p>				

<p>of thin flat samples of diameter 150mm.b) Suitable stage to be provided for in plane and grazing angle diffraction measurement experiments. c) Sample holder: Sample holder shall be sufficient large to hold samples with magnetic/Vacuum arrangement of size up to 150mm diameter.d) Degree of freedom: Minimum 5 degree of freedom (Chi, Phi, X, Y and Z directions) on the sample to measure symmetric, asymmetric and skew symmetric measurement geometries.e) Eulerian cradle for high resolution, triple axis, phase analysis, texture, grazing incidence, reciprocal space mapping measurements with chi, phi, X, Y and Z motorized motion with following specifications:•</p>				
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<p>Chi(&#967;): - 5deg to +90deg or better with step size of 0.01deg or better. • Phi(&#934;): +/-360deg with step size of 0.01deg or better reproducibility +/-0.01deg. • X and Y-Axis: Sufficient (Please specify the value) movement at step of 0.001mm or better to map full wafer of 150mm diameter from center to edge and for simultaneous linear oscillations during RC measurement. • Z-Axis: 4mm-1mm with step size of 0.001mm or better, reproducibility &#8804; (less than or equal to)10.0µm(micron).All these axes alignment shall be automatically done with the installed software.f) Necessary hardware and software for easy switching between different stages of measurement shall be provided.g) All the</p>				
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<p>hardware related to sample stage and optics alignment (adopters, stage for optics alignment if essential) shall be provided.</p>				
<p>3.00.06X-Ray Detector:a) Two dimensional (2D) area detector. It shall be able to work in 0D,1D and 2D mode. (software controlled)b) The offer shall include a table for following detector characteristics:• Type of detector• Angular resolution• Energy resolution• Max cps• Dynamic range• Active Area• Background noise) 98% linearity range for Cu K-alpha radiation between 0-100 billion or better cps over the whole detector.d) Efficiency for Cu K-Alpha >(greater than)90%, frame transfer in static mode<(less than)100milliseconds.e)</p>				

<p>Active Area: >(greater than)2000mm²) Pixel size: &#8804;(less than or equal to)100x100μm².g) Typical dynamic range: 0.5cps to 10M cps or better (for low as well as high intensity applications) with automated dead time correction and automatic assembly to change dynamic range.h) Maximum back ground noise <(less than)1 cps over the whole detector for low intensity.i) Shall have fluorescence suppression mode.j) Shall have automated motorized slit, and with a non-hygroscopic scintillation crystal for a long, maintenance free lifetime (shall not require re-gassing or LN2 cooling).k) Standard scintillation detector shall be additionally provided. l) For fast RSM a suitable optics shall be provided</p>				
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with solid state 2D detector.m) Shall be capable of working in triple axis mode with fully automated crystal alignment				
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HRXRD Specifications-III

Item Specifications -III

Sl. No	Specifications	Compliance (Yes /No)	Offered Specifications	Remarks
3.00.07 Calibration Standards and Data Quality: Shall provide a NIST standard samples and data quality guarantee on the angular position and intensity ratio carried out on such standard NIST sample.				
3.00.08 Data Acquisition and processing (Software): a) Software for alignment of optics, instrument parameter setting, running and monitoring the different motors.b)				

<p>Software shall be able to run various measurement options automatically and in different modes. It shall have an option to run the experiment through user defined sequences</p> <p>c) Software for data collection, processing, display and exporting to ascii format for RSM, diffraction, glancing angle diffraction.</p> <p>d) Software shall be capable of simulation of Rocking Curves for epitaxial crystal structure and substrate</p> <p>e) Search match for measure data</p> <p>f) Background subtraction and smoothing</p> <p>g) Data Base</p> <p>h) Omega or Theta scan and Omega-2Theta scan for GaAs, GaN wafers for 0D,1D and 2D.</p> <p>i) Omega or Theta scan and Omega-2Theta scan for SiGe, SiGeC (alloy) on Si wafers for 0D,1D and 2D.</p> <p>j) Fitting for high resolution data</p>				
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<p>out of plane and in plane.k) RSM, pole figure 3D analysis software,3D crystal structure display) Data reporting to be able to output results in various formats like Excel, PDF to be possible including automatic fitting, improved simulation functionality, smooth fitting of diffraction datam) It shall be user friendly software for operating the basic equipment and for plotting wafer maps, reciprocal space maps, or any other data that requires 2D and 3D surface plotn) It shall be upgradable free on net in futureo) Three (03) license to be provided for the above mentioned software for use with main system, offline analysis and standby purpose</p>				
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<p>3.00.09 Power Requirement: As per Indian standards/ SCL Power requirement 230+/- 10% VAC, 50 +/- 5% Hz, 1 PHASE; OR 415 +/- 10% VAC, 50 +/- 5% Hz, 3 PHASE.</p>				
<p>3.00.10 Instrument Dimensions: Vendor to specify at the time of bidding with appropriate drawings.</p>				
<p>3.00.11 Computer: Computer/workstation to interface with the machine. The computer shall be latest available model based on licensed windows7 or higher (not window vista), or Linux with at least 1TB HDD (preferably as two 500HDDs), 8GB RAM, 23" LED monitor, DVD RW drive, USB slots, graphics cards.</p>				

<p>3.00.12 Options/Accessories: Any optional features or accessories shall be indicated and provided separately. Manufacturer shall include any other additional items, which may be felt essential to carry out the complete integration or operation, and did not get mentioned in the above list. Vendor to provide a table for intensity and resolution for the offered monochromators and crystal.</p>				
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HRXRD Specifications-IV

Item Specifications -IV

SI. No	Specifications	Compliance (Yes /No)	Offered Specifications	Remarks
4	4.00.0 WARRANTY:Vendor to provide a comprehensive part and labor warranty for a			

	<p>period of 24 months after acceptance of the system at SCL. Vendor to guarantee 95% uptime for the tool. Vendor to give two preventive maintenance Visits in the warranty period of the tool. Vendor shall provide all consumables and spares which may be required for preventive maintenance during the period of warranty.</p>			
5	<p>5.00.0 POST WARRANTY SYSTEM SUPPORT:Spares and maintenance support required for 10 years after the expiry of warranty period. Vendor to offer for Post-warranty 'labor-only' AMC charges per year for a period of 5 years. Vendor has to include S/W upgradation during Labor AMCs.</p>			
6	<p>6.00.0 RECOMMENDED SPARES AND</p>			

	<p>CONSUMABLES:Vendor to provide separately the list of recommended spares and consumables which will be required to maintain above stated tool uptime. This list would be for reference only and shall include price information. Even the offer for main tool shall also NOT include any price information for the spares and consumable.</p>			
7	<p>7.00.0 SAFETY:a) Appropriate safety mechanism in terms of alarms and EMO shall be provided for operator safety. Vendor to provide the details.b) The system shall be design to be compliant with CE standards or other Industrial safety standard. c) Full radiation protection with fail/safe open close mechanism, leakage protection radiation as per</p>			

	international standard. Standard radiation detector and dosimeters shall be provided.			
8	8.00.0 TECHNICAL DOCUMENTATION:Vendor to supply two sets of technical documentation (in English language) containing, but not limited to, the following:1. System user manuals (two sets of clean room and two sets for grey rooms).2. System Hardware / Software manuals.3. Maintenance /Diagnostic / Trouble shooting manuals including schematics, Circuit diagram (Electrical & Plumbing) along with Parts for all spares.4. OEM system/subsystem/accessories manuals5. Vendor to recommend/ specify type of pump, accessories and type of oils/grease to be used along with pump operation & maintenance			

	<p>manual to minimize pump down time.6. Vendor shall supply all additional information such as application development notes,paper published/process information etc. related to the system.NOTE: Any other utility required for the tool shall be mentioned by the vendor.Delivery Period: 04-05Months from the date of P.O. released.</p>			
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Vendor Specified Terms

Description	Vendor Terms
<p>1.Delivery Term:</p> <p>For imported stores, prices shall be quoted on FOB/FCA nearest International/Gateway airport basis.</p> <p>For indigenous stores, prices shall be quoted on F.O.R destination basis i.e. SCL, S.A.S. Nagar, Mohali, Punjab, exclusive of GST and taxes as may be applicable.</p>	

<p>2.For indigenous materials, Purchaser is entitled to concessional CGST of 2.5 % and IGST of 5 % as per Ministry of Finance, Department of Revenue, Notification Nos. 45/ 2017 Central Tax (Rate) and 47/2017 Integrated Tax (Rate) both dated 14th November, 2017 respectively and would accordingly issue Exemption Certificate in favour of the contractor quoting in Indian Rupees. The bidder should take note of the same while quoting the prices in Indian Rupees.</p>	
<p>3.For imported materials, Purchaser is entitled to issue Customs duty exemption certificate (CDEC) to the contractor under customs notification no.51/96 dated 23.07.1996 and subsequent amendments to enable the contractor to avail off the benefit of concessional rate of customs duty under this notification. CVD under this notification is nil. In addition to the above CDEC, any documentary support requested by the contractor from the purchaser for customs clearance of goods against the above CDEC shall be provided by the purchaser.</p> <p>(Purchaser will provide Customs Duty Exemption Certificate in case of Import Orders/ imported supplies/ High Sea Sales).</p>	
<p>4.Contractor shall confirm that whether they have submitted offer for new system.</p>	
<p>5. IMPORTANT:</p> <p>This being two part Tender-Technical and Commercial parts separate, the bidder should not attach any document(s) containing pricing information alongwith Technical Part. The Contractor will provide Un-Priced Commercial offer in envelope 1 (Technical Part) as an</p>	

<p>attachment.</p> <p>The tenders containing price information in Technical Part will be treated as unsolicited offers and rejected. Contractor to confirm that Price bid is not attached in Envelope 1 i.e. Technical Part</p> <p>Priced Commercial offer, if any, should be attached in Envelope-2 (Price Bid) under Supporting Documents from Vendor (Commercial), as an attachment</p>	
<p>6.Delivery Period:</p> <p>Purchase shall prefer to take delivery of the system within 4-5 months from the date of release of Purchase Order .</p> <p>However The contractor shall specify their best delivery period inclusive of all Govt. formalities of the exporting country.</p>	
<p>7.Security Deposit (SD):</p> <p>On acceptance of the tender, the Contractor shall submit security deposit for ten percent (10 percent) value of the Purchase Order (PO) within 15 days from the date of PO towards successful execution of the PO. Security Deposit shall be submitted through Demand Draft / Bankers Cheque/ fixed deposit receipt or Bank Guarantee from any of the Scheduled Banks executed on non-judicial stamp paper of appropriate value, and shall be valid for a period of sixty (60) days beyond the date for completion of the Purchase Order.</p> <p>(This will be returned by SCL immediately on execution of the PO satisfactorily as per order terms. If not, the amount will be forfeited).</p>	

8.TERMS OF PAYMENT IN CASE OF OVERSEAS SUPPLIER[S]:

Being a Department of the Government of India, the normal terms of payment are by Sight Draft. The payment shall be remitted as under:

90% of the value of the materials supplied shall be paid within 30 days of the receipt of the materials at purchaser site and the balance 10% amount shall be payable on successful installation, commissioning and acceptance of the entire project at Purchasers site against a Performance Bank.

All bank charges outside India related to the payment shall be borne by the Contractor and all bank charges in India shall be borne by the purchaser.

In the event of the Contractor not being able to provide the Performance Bank Guarantee the payment of balance 10% amount shall be made after the expiry of the warranty period.

Indian agent remuneration/service charge shall be payable by the Purchaser directly to the Indian agent in Indian Rupees based on T.T buying rate of exchange prevailing on the date of placement of purchase order within 30 days of acceptance of equipment at purchaser site.

The Sight Draft will be operative on presentation of the under mentioned documents :

a) Original Airway Bill

b) Commercially certified invoices describing the stores delivered, quantity, unit rate and their total value, in triplicate. The invoice should indicate the discounts, if any, and Agency Commission

<p>separately.</p> <p>c) Packing List showing individual dimensions and weight of packages.</p> <p>d) Country of Origin Certificate in duplicate, wherever applicable.</p> <p>e) Test Certificate, if applicable.</p> <p>f) Declaration by the Seller that the contents in each case are not less than those entered in the invoices and the quality of the Stores are guaranteed as per the specifications asked for by the Purchaser, if applicable.</p> <p>g) Warrantee and guarantee Certificate/s as applicable.</p> <p>While the purchasers bank charges shall be borne by the purchaser, the contractor shall bear the bank charges payable to his banker including the charges towards advising/amendments/commissions etc.</p>	
<p>9.TERMS OF PAYMENT IN CASE OF INDIGENOUS SUPPLIER[S]:</p> <p>The payment shall be remitted as under:</p> <p>90% of the value of the materials supplied shall be paid within 30 days of the receipt of the materials at purchaser site and the balance 10% amount shall be payable on successful installation, commissioning and acceptance of the entire project at Purchasers site against a Performance Bank Guarantee .</p> <p>In the event of the Contractor not being able to provide the Performance Bank Guarantee the payment of balance 10% amount shall be made after the expiry of the warranty period.</p> <p>While the purchaser bank charges shall be borne by the purchaser, the</p>	

<p>contractor shall bear the bank charges payable to his banker including the charges towards advising/amendments/ commissions etc.</p>	
<p>10. Performance Bank Guarantee (PBG):</p> <p>The Contractor shall furnish a Bank Guarantee (as per format given by purchaser) from any nationalized/scheduled bank for an amount equivalent to 10% of the value of the Contract and shall be valid for a period of 60 days beyond the expiry date of warranty period. On the performance and completion of the Contract in all respects, the Bank Guarantee will be returned to the Contractor without any interest.</p>	
<p>11. Warranty :</p> <p>The Contractor shall provide for the tendered equipment comprehensive warranty for parts as well as labour for a period of 24 months after acceptance of the system at Purchasers site at no extra charges against any manufacturing defect/faulty workmanship.</p> <p>In case any defect arises during warranty period, the Contractor should replace/rectify the same at its own cost at site/works.</p> <p>The Contractor to guarantee 95% uptime for the system based on 24 hours working, 7 days a week. The Contractor will provide two Preventive Maintenance (PM) Visits in the warranty period of the tool.</p> <p>Contractor will also provide all consumables, spares and PM kit which will be required during preventive maintenance during the warranty period at no extra cost.</p>	

<p>12. Post Warranty System Support:</p> <p>Contractor will ensure Spares and maintenance support required for 10 years after the expiry of warranty period.</p> <p>Contractor shall provide quote for Post-warranty (labour-only) AMC charges per year for a period of 5 years. Vendor has to include software up-gradation during labor AMCs.</p> <p>This AMC charges may be quoted in Envelope -2 (Price Bid) under Supporting Documents from Vendor (Commercial), as an attachment. These charges shall be for reference purpose and shall not be considered during evaluation of the tendered stores.</p>	
<p>13. Recommended Spares and Consumables:</p> <p>The Contractor to provide separate itemized Quote (optional, for reference) for recommended essential spares and consumables essential above stated tool uptime. This itemized quote would be for reference only and shall not include in price information.</p> <p>Price of these recommended spares and consumables may also be quoted in Envelope-2(Price Bid) under Supporting Documents from Vendor(Commercial), as an attachment. These charges shall not be considered during evaluation of the tendered stores.</p>	
<p>14. Warranty Replacements:</p> <p>a) If in the opinion of the purchaser it becomes necessary to replace or repair any defective equipment during the warranty period, such replacement or repair shall be made by the Contractor free of all costs to the Purchaser provided the notice informing the Contractor of the</p>	

<p>defect is given by the Purchaser within a period of 26 months from the date of acceptance thereof.</p> <p>b) All replacement parts during the warranty period shall be supplied by the Contractor, free-of-cost on DDP (Delivery Duty paid) basis with freight and insurance upto Purchaser site at S.A.S. Nagar, Punjab and customs duty applicable in India to the Contractor account including compliance with the customs procedure in India. The indigenous replacement parts, if any, shall be supplied by the Contractor free of cost on F.O.R. Purchaser site at SAS Nagar, Punjab basis.</p> <p>All defective parts including the imported parts shall be returned by Purchaser to the Contractor, if requested, on Freight to pay basis.</p>	
<p>15.REPLACEMENT :</p> <p>If the stores or any portion thereof is damaged or lost during transit, the Purchaser shall give notice to the Contractor setting forth particulars of such stores damaged or lost during transit. The replacement of such stores shall be effected by the Contractor within a reasonable time to avoid unnecessary delay in the intended usage of the Stores. In case the purchaser agrees, the price towards replacement items shall be paid by the purchaser on the basis of original price quoted in the tender or as reasonably worked out from the tender.</p>	
<p>16.Validity of Offer:</p> <p>The tender must be valid for a minimum period of 120 days from the date of opening of Technical bid and 90 days after opening of Price bid.</p>	

<p>17.Liquidated Damages (LD):</p> <p>If the Contractor fails to deliver the stores within the time specified in the contract or any extension thereof, the purchaser shall recover from the Contractor as liquidated damages a sum of one-half of one percent (0.5 percent) of the Contract price of the undelivered stores for each calendar week of delay. The total liquidated damages shall not exceed ten percent (10 percent) of the Contract price.</p>	
<p>18.Mode of Despatch:</p> <p>In case of foreign orders, stores should be dispatched to IGI Airport, New Delhi through freight forwarder nominated by the purchaser whose details shall be indicated in the purchase order.</p>	
<p>19.EXTENSION OF TIME :</p> <p>If the completion of supply of stores is delayed due to reason of force majeure such as acts of god, acts of public enemy, acts of Government, fires, floods, epidemics, quarantine restriction, strikes, freight embargoes, etc., the Contractor shall give notice within 15 days to the purchaser in writing of his claim for an extension of time. The purchaser on receipt of such notice after verification, if necessary, may agree to extend the Contract delivery date as may be reasonable but without prejudice to other terms and conditions of the Contract.</p>	
<p>20.INSTALLATION AND COMMISSIONING :</p> <p>Installation, commissioning and demonstration of performance of the tendered stores as per Purchaser tendered specifications shall be carried out by the Contractor at Purchaser site at S.A.S. Nagar, Punjab,</p>	

<p>India.</p> <p>The Contractor shall provide in advance guidelines for preparation of the installation site and list of items to be supplied by Purchaser during installation.</p> <p>On receipt of intimation from the Purchaser, the Contractor shall depute its engineer(s) to Purchaser site within two weeks to carry out installation and commissioning and will demonstrate the functionality of the tendered equipment to Purchaser specifications as per mutually agreed acceptance procedure. The Contractor shall be responsible for any loss/damages sustained due to delay on the part of the Contractor to send its engineer for installation and commissioning.</p> <p>Failure to commission the tendered equipment successfully shall entitle Purchaser to full refund of the payment made and the interest thereon. Decision regarding successful installation and commissioning shall rest solely with the Purchaser.</p>	
<p>21. Insurance of Stores:</p> <p>Insurance wherever necessary, will be arranged by the Purchaser. The necessity or otherwise of insurance will be as indicated in the Purchase Order/Contract.</p>	
<p>22. Packing & Forwarding:</p> <p>The Contractor shall pack and crate all stores for air/sea/road shipment as applicable in a manner suitable for export to a tropical humid climate, in accordance with internationally accepted export practices and in such a manner so as to protect it from damage and deterioration in transit by road, rail, air or sea. The Contractors shall be</p>	

responsible for all damages due to improper packing.	
<p>23.Arbitration:</p> <p>If at any time any question, dispute or difference whatsoever shall arise between the purchaser and the Contractor upon or in connection with this Contract, either party may forthwith give to the other notice in writing of the existence of such question, dispute or difference and the same shall be referred to the adjudication of two arbitrators, one to be nominated by purchaser, other by a Contractor and in the event of any difference of opinion, the arbitrators will refer the matter to the umpire. The arbitration shall be conducted in accordance with the rules and procedure for arbitration of the International Chamber of Commerce at Paris. The expenses of the arbitrators and umpire shall be paid as may be determined by them. However, the venue of such arbitration should be in India. In case of dispute arises with domestic/Indian suppliers, the applicable Arbitration procedure shall be as per Indian Arbitration & Conciliation Act, 1996.</p>	
<p>24.Applicable Law:</p> <p>The Contract shall be interpreted, construed and governed by the laws of India.</p>	
<p>25.Any Other Term:</p>	

Supporting Documents from Vendor

Attachment - I:

Attachment - II:

Price Bid Form

Item Description	Slab Range	Qty	UOM	Currency	Unit Price	Total Price
High Resolution X-Ray Diffraction (HRXRD) Setup For structural characterization of III-V compound semiconductor thin films	-	1	No.	-	-	-

Break-up of other taxes and other costs should be specified in respective narration columns.

Sum of these Break-up values should be specified in respective value columns.

Supporting Documents from Vendor (Commercial)

Document attachment with price bid

Attachment - I:

Attachment - II: