

**GOVERNMENT OF INDIA
DEPARTMENT OF SPACE
SEMI-CONDUCTOR LABORATORY (SCL)
CHANDIGARH**

**Tender for Supply ,Installation and commissioning of ICP Reactive Ion
Etch tool For Poly Silicon Etching**

Bids to be submitted online

Tender No.: SCL/PurUnit-2/SC202100007001 dated 30-09-2021

A. Tender Details

Tender No :	SCL/PurUnit-2/SC202100007001
Tender Date :	30-09-2021
Tender Classification:	GOODS
Purchase Entity :	PurUnit-2
Centre :	SEMI-CONDUCTOR LABORATORY (SCL)

Procurement of Supply ,Installation and commissioning of ICP Reactive Ion Etch tool For Poly Silicon Etching

1.E-Procurement Tender No. SCL/PurUnit-2/VMFG/2021000070; SEMI-CONDUCTOR LABORATORY [SCL] invites ONLINE offers in TWO part system through e-tender portal <https://eproc.vssc.gov.in> for Supply, Installation and Commissioning of ICP Reactive Ion Etch tool For Poly Silicon Etching. Bid can be submitted from 30.09.2021 - 1430 hrs. to 28.10.2021 upto 1430 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://eproc.vssc.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. Vendors may please note that without registering in our E-procurement portal they will not be able to quote for this tender.

2.In case bidder encounters any technical snag pertaining to e-procurement system while acting on the tender, computer screen shot of the error message with date & time stamp on the web-browser along with the query shall be e-mailed by the bidder to the help desk, for resolution of the problem, at least 2 working days before the due date and time of bid submission. The contact detail of the help desk is available on the home page of the e-procurement website.

Purchaser will make all efforts to resolve technical queries reported by the bidders but will not be bound to do so if the problems are reported beyond the time mentioned above. Purchaser will not be responsible for non-submission of bids for such cases.

The time taken to ascertain, evaluate and suggest a solution for the problem reported by bidder may

vary from case to case. Hence bidders are advised to submit the bid well in advance before closing date and time to avoid last minute issues.

A.1 Tender Schedule

Bid Submission Start Date :	30-09-2021 14:30
Bid Clarification Due Date :	12-10-2021 14:30
Bid Submission Due Date :	28-10-2021 14:30
Bid Opening Date :	28-10-2021 15:00
Price Bid Opening Date :	08-11-2021 14:30

B. Tender Attachments

NA

Instructions To Vendors

1. INSTRUCTIONS TO TENDERERS AND TERMS CONDITIONS OF TENDER

1. Bid shall be submitted on-line only complying specified schedule.
2. Late tenders and delayed tenders will not be considered.
3. GST and/or other duties/levies legally leviable and intended to be claimed should be distinctly shown separately in the tender.
4. a) 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.
b) Samples, if called for, should be submitted free of all charges by the tenderer and the Purchaser shall not be responsible for any loss or damage thereof due to any reason whatsoever. In the event of non acceptance of tender, the tenderer will have to remove the samples at his own expense.
c) Approximate net and gross weight of the items offered shall be indicated in your offer if available. If dimensional details are available the same should also be indicated in your offer.
(d) Specifications: Stores offered should strictly confirm to our specifications. Deviations, if any, should be clearly indicated by the tenderer in his quotation. 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.
5. 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.
6. The tenderer should supply along with his tender, 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.
7. The authority of the person signing the tender, if called for, should be produced.

8. In case of any difference between General Terms & Conditions enclosed and Terms & Conditions specific to this tender i.e. technical specifications & Vendor Specified Terms, Terms and Conditions specific to this tender will prevail.

9. TERMS CONDITIONS OF TENDER

10. DEFINITIONS:

- a. The term PURCHASER shall mean Semi-Conductor Laboratory, Sector-72, Mohali, Punjab-160071, under the administrative control of DOS, Government of India.
- b. The term CONTRACTOR shall mean, the person, firm or company with whom or with which the order for the supply of stores is placed and shall be deemed to include the Contractor's successors, representative, heirs, executors and administrators unless excluded by the Contract.
- c. The term STORES shall mean what the Contractor agrees to supply under the Contract as specified in the Purchase Order including erection of plants machinery and subsequent testing, should such a condition is included in the Purchase Order. The term PURCHASE ORDER shall mean the communication signed on behalf of the Purchaser by an Officer duly authorised intimating the acceptance on behalf of the Purchaser on the terms and conditions mentioned or referred to in the said communication accepting the tender or offer of the Contractor for supply of stores or plant, machinery or equipment or part thereof.

11. PRICES:

Tender offering firm prices will be preferred. Where a price variation clause is insisted upon by a tenderer, quotation with a reasonable ceiling should be submitted. Such offers should invariably be supported by the base price taken into account at the time of tendering and also the formula for any such variation/s.

12. PACKING FORWARDING INSURANCE:

The Contractor will be held responsible for the stores being sufficiently and properly packed for transport by rail, road, sea or air to withstand transit hazards and ensure safe arrival at the destination. The packing and marking of packages shall be done by and at the expense of the Contractor. The purchaser will not pay separately for transit insurance, all risks in transit being exclusively of the Contractor and the Purchaser shall pay only for such stores as are actually received in good condition in accordance with the Contract.

13. DESPATCH:

The Contractor is responsible for obtaining a clear receipt from the Transport Authorities specifying the goods dispatched. The consignment should be dispatched with clear Railway Receipt/Lorry Receipt. If sent in any other mode, it shall be at the risk of the Contractor. Purchaser will take no responsibility for short deliveries or wrong supply of goods when the same are booked on said to contain basis. Purchaser shall pay for only such stores as are actually received by them in accordance with the Contract.

14. TEST CERTIFICATE:

Wherever required, test certificates should be sent along with the dispatch documents.

15. ACCEPTANCE OF STORES:

- a. The stores shall be tendered by the Contractor for inspection at such places as may be specified by the purchaser at the Contractor's own risk, expense and cost.
- b. It is expressly agreed that the acceptance of the stores Contracted for, is subject to final approval by the purchaser, whose decision shall be final.
- c. If, in the opinion of the purchaser, all or any of the stores do not meet the performance or quality requirements specified in the Purchase Order, they shall be rejected may be either rejected or accepted at a price to be fixed by the purchaser and his decision as to rejection and the prices to be fixed shall be final and binding on the Contractor.
- d. If the whole or any part of the stores supplied are rejected in accordance with Clause No. 6 (c) above, the purchaser shall be at liberty, with or without notice to the Contractor, to purchase in the open market at the expense of the Contractor stores meeting the necessary performance and quality Contracted for in place of those rejected, provided that either the purchase, or the agreement to purchase, from another supplier is made within six months from the date of rejection of the stores as aforesaid.

16. REJECTED STORES:

Rejected stores will remain at destination at the Contractor's risk and responsibility. If instructions for their disposal are not received from the Contractor within a period of 14 days from the date of receipt of the advice of rejection, the purchaser or his representative has, at his discretion, the right to scrap or sell or consign the rejected stores to Contractor's address at the Contractor's entire risk and expense, freight being payable by the Contractor at actuals.

17. DELIVERY:

- a. The time for and the date of delivery of the stores stipulated in the Purchase Order shall be deemed to be the essence of the Contract and delivery must be completed on or before the specified dates.
- b. Should the Contractor fail to deliver the stores or any consignment thereof within the period prescribed for such delivery, the purchaser shall be entitled at his option either.
 - (i) to recover from the Contractor as agreed liquidated damages and not by way of penalty, a sum of 0.5% per week of the price of any stores which the Contractor has failed to deliver as aforesaid or during which the delivery of such store may be in arrears subject to a minimum of 10%, or
 - (ii) to purchase from elsewhere, without notice to the Contractor on the account and at the risk of the Contractor, the stores not delivered or others of a similar description (where others exactly complying with the particulars, are not, in the opinion of the purchaser, readily procurable, such opinion being final) without cancelling the Contract in respect of the consignment (s) not yet due for delivery, or

(iii) to cancel the Contract or a portion thereof and if so desired to purchase or authorise the purchase of stores not so delivered or others of a similar description (where others exactly if complying with the particulars are not, in the opinion of the purchaser, readily procurable, such opinion final) at the risk and cost of the Contractor.

In the event of action being taken under sub-clause (ii) (iii) of clause above, the Contractor shall be liable for any loss which the purchaser may sustain on that account, provided that the re-purchase or if there is an agreement to repurchase then such agreement is made within six months from the date of such failure. But the Contractor shall not be entitled to any gain on such re-purchase made against default. The manner and method of such re purchase shall be at the discretion of the purchaser, whose decision shall be final. It shall not be necessary for the purchaser to serve a notice of such re purchase on the defaulting Contractor. This right shall be without prejudice to the right of the purchaser to recover damages for breach of Contract by the Contractor.

18.

EXTENSION OF TIME:

As soon as it is apparent that the Contract dates cannot be adhered to, an application shall be sent by the Contractor to the purchaser. If failure, on the part of the Contractor, to deliver the stores in proper time shall have arisen from any cause which the purchaser may admit as reasonable ground for an extension of the time (and his decision shall be final) he may allow such additional time as he considers it to be justified by circumstances, of the case without prejudice to the purchaser's right to recover liquidated damages under clause 8 thereof.

19. ERECTION OF PLANT MACHINERY:

Wherever erection of a plant or machinery is the responsibility of the Contractor as per the terms of the Contract and in case the Contractor fails to carry out the erection as and when called upon to do so within the period specified by the purchaser, the purchaser shall have the right to get the erection done through any source of his choice. In such an event, the Contractor shall be liable to bear any additional expenditure that the purchaser is liable to incur towards erection. The Contractor shall, however, not be entitled to any gain due to such an action by the purchaser.

20. PAYMENT:

Contractor's bill will be passed for payment only after the stores have been received, inspected and accepted by the Purchaser.

21. MODE OF PAYMENT:

Normally payment will be made for the accepted stores within 30 days from the date of receipt of the materials.

22. 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.

23. 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 Trademark, and shall at all times indemnify the purchaser against all claims which may be made in respect of the stores for infringement of any right protected by Patent Registration of design or Trade mark and shall take all risk of accidents or damage which may cause a failure of the supply from whatever cause arising and the entire responsibility for sufficiency of all means used by him for the fulfillment of the contract.

24. COUNTER TERMS AND CONDITION 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.

25. SECURITY FOR PURCHASE OF MATERIALS:

Successful tenderer will have to furnish in the form of a bank guarantee or any other form as called for by the purchaser towards adequate security for the materials and properties provided by the Purchaser for the due execution of the Contract.

2. Instruction to Tenders (PT):

1.This being a two-part tender i.e. Technical and commercial part separate, the Technical part should not contain Pricing information of the Tendered stores. The tenders containing Price details of the Tendered stores in Technical part will be summarily rejected. Prices should be indicated in the Price Bid template only.

2.Interested tenderers may, at their option, login to <https://eproc.vssc.gov.in> and submit offers as per details in the tender notification.

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.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.
- 6.SCL reserves the right to exclude the bidder from procurement process who have not agreed to furnish Security Deposit and Performance Bank Guarantee as sought vide this tender.
- 7.In case the bidder gives shorter validity than the period specified in the tender enquiry. SCL reserves the right to exclude the bidder from procurement process.
8. Late tenders, delayed tenders, fax quotations and e-mail quotations are not considered. Only tender submitted through ISRO e-procurement portal ([https:// eproc.vssc.gov.in](https://eproc.vssc.gov.in)) shall be considered.
9. SCL reserves the right to verify all claims made by the bidder.
10. SCL reserves the right to change any milestone date of the tendering activity / tender schedule.
- 11.Tender which is not submitted as per the instructions mentioned herein is liable to be rejected.
- 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 tenderer 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 tender. 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 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. Samples, if called for, should be submitted free of all charges by the tenderer and the Purchaser shall not be responsible for any loss or damage thereof due to any reason whatsoever. In the event of non-acceptance of tender, the tenderer will have to remove the samples at his own expense.
20. Approximate net and gross weight of the items offered wherever required shall be indicated in your offer. If dimensional details are available the same should also be indicated in your offer.
- 21.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.

22..The tenderer should supply along with his tender, 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.

23.The contractor shall also undertake the supply of additional number of items covered by the order as considered necessary by the purchaser at a later date, the actual price to be paid shall be mutually agreed to after negotiations.

24.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 without 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.

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

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

27.In case of Public Tender, the bids shall be opened in the presence of the bidders/their authorized representatives who may like to attend the tender opening against presentation of Authorization letter.

In case of 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.

28.PROCEDURE FOR EVALUATION OF TENDERS:

Technical Evaluation Criteria:

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

Evaluation of Price Bids:

The following elements shall be considered for evaluation of Price Bids:

a)Price quoted by the bidder in the price bid template for meeting the functionalities given in the Tender and Technical Specifications sheet.

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 prime lending rate of RBI prevailing on the date of opening of bids and as per Instructions of Government of India as applicable from time to time.

c) Post warranty labour only AMC charge and cost of recommended essential spares and consumables shall not be taken into account for evaluation of price bids.

C. Bid Templates

C.1 Technical Bid - Supply ,Installation and commissioning of ICP Reactive Ion Etch tool For Poly Silicon Etching

1. SUPPLY, INSTALLATION & COMMISSIONING OF ICP Reactive Ion ETCH Tool For Poly Silicon Etching

Document : Specification

Common Specifications (Applicable for all items)

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	1.00.00 SCOPE OF WORK	Vendor's scope of work shall cover supply, installation & commissioning of ICP (Inductively Coupled Plasma) Dry Etch tool is required for Dry etching of Poly-silicon Thin films deposited over 150mm or 200mm Semi standard Silicon Wafers. The Tool shall have a centralized handler system of handling and Processing of SEMI standard 150mm & 200mm silicon wafers for MEMS and CMOS device manufacturing process (0.18µm technology node).	Yes / No / Explain		

2	2A : The scope of work shall include the following:	<ul style="list-style-type: none"> - Design, Detailed engineering, Fabrication and Supply of Dry Etch tool, as per the required specifications. - Supply of all support tools including chamber vacuum pumps, Chillers, etc. - Installation of the tool and Support equipment, including all utility connections. - Commissioning of the Tool and demonstration of its functionality as per the required specifications. 	Yes / No / Explain		
3	2B : The scope of work shall include the following:	<ul style="list-style-type: none"> - On-site training to concerned SCL personnel on Operations, Maintenance & Trouble shooting of the equipment. <p>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. The equipment shall meet all SEMI regulations and must be SEMI complied.</p>	Yes / No / Explain		
4	ELIGIBILITY CRITERIA	<p>Only those suppliers shall participate in the bid who have adequate exposure and experience in manufacturing, maintenance/support and supplying similar tools around the globe. Vendor shall provide their client list/ list of installations for such tools installed by them in last 7 years</p>	Yes / No / Explain		

5	SCOPE OF SUPPLY	<p>A. Vendor shall supply the equipment, including support tools viz. Chiller units, Vacuum pumps, RF carts, etc. as per the Technical Specifications (Refer spec point no 13 to 20).</p> <p>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 be deemed to be included in the scope of supply of the vendor unless explicitly indicated in the bid by the vendor.</p>	Yes / No / Explain		
6	A. SCOPE OF INSTALLATION AND COMMISSIONING	<ol style="list-style-type: none"> 1. It will be the responsibility of the vendor to ensure proper installation & commissioning of the tool at SCL. 2. Vendor shall provide guidelines for preparation of installation site. 3. Vendor shall also supply the installation drawings giving detailed information regarding the port size & type for the utility connections. 4. Vendor shall uncrate the tool, move the same to the respective area(s) and install the tool on foundations, etc. SCL will provide utilities hook-up up to the tool. 	Yes / No / Explain		

7	B. SCOPE OF INSTALLATION AND COMMISSIONING	<p>5. Vendor shall Commission the systems with the required process gases (to be supplied by SCL) and demonstrate the functionality of the tool supplied, at SCL site.</p> <p>6. Vendor shall bring all necessary tools/instruments etc. that may be required for successful commissioning/ installation/ verification of the system and sub systems of the equipment.</p>	Yes / No / Explain		
8	TRAINING	<p>During commissioning of the equipment vendor shall provide on-site hands-on training to the concerned SCL personnel (including classroom training) 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>	Yes / No / Explain		

9	ACCEPTANCE PROCEDURE:	Vendor shall demonstrate, at site, the functionality as per the tool acceptance procedure specified at point no 27 to 32. Vendor shall provide best known baseline process recipes for validating the process parameters mentioned in specification point no 27 to 32. 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 equipment, as per the acceptance procedure (Spec Point no 27 to 32), for at least for three runs having 5 wafers at SCL.	Yes / No / Explain		
10	Gas Systems:	Vendor shall submit records and test method for all the below-mentioned tests conducted at their works during fabrication of the gas handling/distribution system(s) housed in the integrated gas cabinet/box. Helium leak integrity test procedure shall comply with the Semi standard (F1-96):	Yes / No / Explain		
11	TECHNICAL 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. Vendor has to provide clause by clause. The statements in the compliance sheet shall be supported by relevant documents/brochures.	Yes / No / Explain		

12	APPLICATION	<p>ICP (Inductively Coupled Plasma) Dry Etch tool is required for Dry etching of Poly-silicon Thin films deposited over 150mm or 200mm Semi standard Silicon Wafers. The Tool shall have a centralized handler system of handling and Processing of SEMI standard 150mm & 200mm silicon wafers for MEMS and CMOS device manufacturing process (0.18μm technology node). The system is required mainly to process 150mm wafer size only but it shall have capability of handling and processing 200mm wafers sizes (i.e. tool shall allow changes from 150mm to 200mm in not more than one 8 hour shift timing by SCL engineers). The tool is to be class 10 clean room compatible.</p>	Yes / No / Explain		
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13	SYSTEM REQUIREMENT	<p>Process Chamber (For Poly-silicon Etching): Chamber shall be manufactured from Suitable material (vendor to specify) which is compatible with the process for better vacuum integrity and compatibility with process gases to be used. Chamber shall have electrical heating kit which warms chamber/liner up to 100,°C or better so as to minimize process deposition. Chamber may have Liner kit to minimize loss of reactive species to solid surface (within Chamber), for easier cleaning of chamber and to reduce frequency of cleaning required. Chamber shall have provision of a view port for viewing plasma.</p>	Yes / No / Explain		
14	Plasma Source	<p>System shall have ICP Source: (of minimum power 1500 watt or better) for low PR damage and high mask selectivity.</p> <ul style="list-style-type: none"> • The RF package shall have RF Generators and Automatic Matching units suitably designed to deliver stable source of RF energy needed to power the ICP source. • Automatic Impedance matching Network shall regulate chamber impedance to ensure RF power is efficiently coupled to Plasma. • RF Generator and Automatic matching unit for lower electrode (Vendor to specify power and frequency range, preferably 1000 watt) 	Yes / No / Explain		

15	Vacuum Pumps	<p>The system shall have the following Vacuum systems/type:</p> <ul style="list-style-type: none"> • Turbo-molecular Pump (TMP make Leybold/Varian/Pfeiffer/Edwards) for process chamber shall be corrosion resistant, with heated backing valve. • Dry pump for turbo backing (Edwards make preferably), shall be corrosive resistant. • Fore-line Heating Kit (Wherever required) • Pump down heating kit to warm the fore-line pipe-work to 80°C to minimize process deposition (Wherever required). • Vacuum pump shall have in-built safety locks for fail safe operations/shutdown in case of utility failure • Capacitive Manometer Gauge Kit 	Yes / No / Explain		
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16	Lower Electrode	<p>Lower Electrode shall have following features:</p> <ol style="list-style-type: none"> 1. Fluid heated or cooled fixed height Aluminum/ceramic/suitable material lower electrode capable of handling substrates of 6" and 8". 2. Electrostatic clamping Mechanism. 3. Electro-static chuck (ESC) – 4. for thick dielectric construction 5. Able to clamp through thick non-conducting substrates. 6. Shall have Pin lift arrangement. 7. Shall have Polarity switches after each clamp cycle to prevent charge build-up on electrodes. 8. Plasma-on de-chuck operation. 9. Shall be Compatible with wafer-less plasma cleans, even with bias applied. 10. ESC & Helium back-pressure control. 11. Shall have Variable ESC Clamping Voltage. 12. Helium assisted heat transfer (HBC) for uniform temperature on substrate. 13. Temperature range -30°C to +80 °C (with ±1 °C temperature stability). (other options as applicable for the processes can be offered) 14. The full range of temperature control shall be automatically controlled from the recipe without user intervention between the cooling and heating ranges. 15. Shall be Compatible with processing of wafers sizes of 150mm and 	Yes / No / Explain		
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		200mm diameters. 16. The re-circulating heater/chiller unit shall be remotely controlled (i.e. shall be controlled from System main Consol and process Recipes). 17. Preferable chiller fluid Glycol/ Per-fluorocarbon.			
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17	Load Lock Chamber and Robotic Handler	<p>Load Lock Chamber and Robotic Handler shall have the following features:</p> <ul style="list-style-type: none"> • A fully automated, vacuum based, Robotic substrate Handling systems for high-volume/high-mix production support. • Hands free, cassette-to cassette operation-transfer substrate to and from the transport cassette without operator's intervention. • High throughput (Robotic transfer rate at least 50 wafers per hour in steady state/no process conditions). • Handler versatility: able to accommodate SEMI-Standard substrates sizes of 150mm (6") and 200mm (8"). • Integrated Cassette and substrate sensing –cassette presence, substrate mapping, and cross slot detection. • Brooks wafer Automation (Transfer Robot) including integrated optical substrate pre-aligner for flat (in case of 150 mm wafer) and notch (for 200mm wafer) aligning. • Suitable isolation valve between robotic handler chamber and process chamber/module (Include Vacuum Gauges) • Vendor to supply all necessary Dry pump for load-lock/Dealer (Edwards make) and for turbo backing. • Integration kit for use on robotic handler for 150mm and 200mm wafers. • All Necessary dry Vacuum pump and interconnection assembly shall be 	Yes / No / Explain		
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		optimally designed to evacuate the substrate handler's transport chamber and load port from atmosphere to a configurable crossover pressure.			
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18	Operator Interface:	<p>The system shall be provided preferably with windows OS, multiple core processors with minimum 4 GB RAM or more, LAN Port, USB ports, LED/LCD preferably 24" Display unit, user friendly interface. Ethernet port and Device Net™ interface cards as needed.</p> <p>System Console: The system console module shall have:</p> <ul style="list-style-type: none"> • All the electronic sub systems attached to the tool control units and pneumatics, Water, gas services and the turbo molecular pump controller shall be on System Console Module. • The system shall be powered from a single supply and all other ancillary units shall be powered from the System console module. • The main System Console shall have a Single point Safety Interlock. The system shall be fully interlocked to protect the system hardware from any service failure and to protect the operator from electrical shock during maintenance procedures. <p>Software: The System shall have</p> <ul style="list-style-type: none"> • Recipe programming for all major process parameters. • Includes data logging of user-selectable run-time process parameters. • Graphic diagram shall show system status. • Process recipe steps defined. • Each gas line is 	Yes / No / Explain		
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		<p>defined, with input of mass flow settings directly in sccm</p> <ul style="list-style-type: none"> • Real time display of present and actual values of gas flows, pressure, RF power (forward and reflected) • Supported by SECS/GEM (HSMS Compliant) Interface. 			
19	Gas Box/Integrated Distribution Panel	<p>The system shall comply with the following:</p> <ul style="list-style-type: none"> • Chamber shall have Gas box fitted with gas distribution & handling components of reputed makes. • System shall have suitable standard gas line and MFCs for all toxic and non-toxic gases (Gases required to be hooked with Chamber are: N2, HBr, Cl2, CF4, CHF3, Ar, O2, He, SF6). • The gas line shall be orbital welded SS 316L EP (< 10 Ra). All mechanical joints shall be stainless steel VCR type fittings. The gas supply line shall include suitable electro-pneumatic isolation valve(s), Pressure regulator, Pressure gauge/transducer, MFC, and in-line point of use filter (3 m rating). 	Yes / No / Explain		
20	End Point Detection :	<p>The chamber shall be integrated with Suitable end point detection system based on OES (Optical Emission Spectroscopy) and shall be fully integrated into system</p>	Yes / No / Explain		

21	WARRANTY	Vendor to provide a comprehensive part and labor warranty for a period of 24 months after acceptance of the system at SCL. Vendor to guarantee 95 % uptime for the equipment based on 24 hours working, 7 days a week. Vendor to give two Preventive Maintenance Visits in the Warranty Period of the tool. Vendor to provide all consumables and spares which will be required during preventive maintenance during the period of warranty.	Yes / No / Explain		
22	POST WARRANTY SYSTEM SUPPORT:	Spares and maintenance support required for 10 years after the expiry of warranty period. Vendor to quote for Post-warranty 'labor-only' AMC charges per year for a period of 5 years	Yes / No / Explain		
23	RECOMMENDED SPARES AND CONSUMABLES	Vendor to provide the separately the list of recommend spares and consumables which will be required to maintain above stated tool uptime. this list would be for reference only and shall NOT include any price information. Even the quote of the main tool shall also NOT include any price information for spares and consumable.	Yes / No / Explain		

24	SAFETY	<p>Appropriate safety mechanism in terms of alarms and EMO shall be provided for operator safety. Vendor to provide the details.</p> <ul style="list-style-type: none"> • The system shall be design to be complaint with CE standards or other Industrial safety standard. • Fitted with all necessary safety interlocks (Hardware and software) for safe operation. 	Yes / No / Explain		
25	TECHNICAL DOCUMENTATION	<p>Vendor to supply two sets of technical documentation (in English language) containing, but not limited to, the following:</p> <ul style="list-style-type: none"> • System user manuals (two sets of clean room and two sets for grey rooms). • System Hardware / Software manuals. • Maintenance /Diagnostic / Trouble shooting manuals including schematics, Circuit diagram (Electrical & Plumbing) along with Parts for all spares. • OEM system/subsystem/accessories manuals. • Vendor shall supply all additional information such as application development notes, paper published/process information etc. related to the system. 	Yes / No / Explain		

26	SPECIAL NOTE:	<p>1. Vendor to provide information on the number of wafers required for setting up the tool as per above acceptance procedure.</p> <p>2. Process recipes shall be demonstrated with proper end point detection.</p> <p>3. Vendor has to demonstrate the post process particle count and metal ion contamination on the processed wafers for all Best Known Recipe.</p> <p>4. Vendor shall demonstrate the handler capabilities by continuously running 300 wafers (To be provided by SCL) under no process conditions (Without any alarm or warning).</p>	Yes / No / Explain		
27	Film To be Etched :	Poly Silicon	Yes / No / Explain		
28	Etch Rate (E/R) :	1600 A/min	Yes / No / Explain		
29	Selectivity to PR	<p>1. For 6" wafer : >= 3:1</p> <p>2. For 8" wafer : >= 1.5:1</p>	Yes / No / Explain		
30	Sidewall Profile :	87 ± 3 deg	Yes / No / Explain		
31	E/R Non Uniformity both for Blanket and patterned (within wafer) 6mm edge exclusion :	< 5%	Yes / No / Explain		
32	Non Uniformity (wafer-to-wafer) 6mm edge exclusion :	< 5%	Yes / No / Explain		

33	Vendor eligibility criteria	<p>1. Bidder shall be manufacturer or supplier of ICP Reactive Ion Etch tool For Poly Silicon Etching, preferably manufactured in INDIA.</p> <p>2. The supplier must be Class-1 / Class-2 supplier as per (Gol order P-45021/2/2017-PP(BE-2)) Make In India (MII) policy and shall confirm the same in the Bid</p> <p>3. Bidder shall have adequate infrastructure viz. Cleanroom, Analytical equipment, etc. at their works in India, for tool fabrication, quality control, safety certification, etc.</p> <p>4. Bidder shall provide details pertaining the available infrastructure like Class & Area of Cleanroom(s) for fabrication, Make & Model numbers of the analytical tools being used at their works for quality control & purity certification, etc.</p> <p>5. Bidder shall have supplied at least three, similar tools (Reactive Ion Etch tool) in last two years. Bid shall include names of the customers (domestic /foreign) to whom similar RIE tool have been supplied and the copies of Purchase orders /Work orders supplied.</p>	Yes / No / Explain		
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Supporting Documents required from Vendor

1. Un Price Quotation of the tool

2. Technical Documentation of the Tool

3. Supporting Documents

5 additional documents can be uploaded by the vendor

C.2 Commercial Terms / Bid

Sl. No.	Description	Compliance	Vendor Terms
1	New tool	Yes / No / Explain	
2	<p>This being a two part tender - Technical and Commercial part separate, the Technical part should not contain Pricing information. The tenders containing Price details in Technical part will be summarily rejected.</p> <p>The prices should be quoted in Price-Bid template only.</p>	Yes / No / Explain	
3	<p>The participating vendors/suppliers/service providers shall indicate specifically whether they fall in the category of Class-I Local supplier or Class-II Local supplier or Non-Local supplier for evaluation as per Ministry of Commerce and Industry Office Order No;-P-45021/2/2017-PP (B-II) dt September 16, 2020.The vendor/supplier/service provider shall submit documentary proof in this regard. The provisions of above referred OM shall apply for this procurement.</p>	Yes / No / Explain	
4	<p>Delivery Term: Price shall be quoted on F.O.R SCL, S.A.S Nagar basis exclusive of GST as may be applicable</p>	Yes / No / Explain	
5	<p>GST: Purchaser is eligible to concessional IGST of 5 percent as per Ministry of Finance, Department of Revenue, Notification No. 47/2017 Integrated Tax (Rate) dated 14th November, 2017 and would accordingly issue Exemption Certificate in favour of the vendor. The bidder should take note of the same while quoting the prices</p>	Yes / No / Explain	

6	<p>3.For imported materials, Purchaser is entitled to issue Customs duty exemption certificate (CDEC) to the vendor to avail 5.5% of custom duty under customs notification no.51/96 dated 23.07.1996 and subsequent amendments to enable the vendor 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 vendor from the purchaser for customs clearance of goods against the above CDEC shall be provided by the purchaser. The concessional customs duty shall be applicable as per Govt. Of India Notification as applicable from time to time.</p>	Yes / No / Explain	
7	<p>Security Deposit (SD): On acceptance of the tender, the Vendor shall submit security deposit for three percent (3 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> <p>In case Security Deposit is submitted in the form of Bank Guarantee (BG), after the issue of BG, the issuing bank shall communicate the genuineness of BG through e-mail from banks domain to njain@scl.gov.in followed by a hard copy to Shri Naveen Jain, Accounts officer, Semi- Conductor Laboratory, Sector-72, Mohali-160071 and copy to Shri Rajesh Kunjar, Sr. Purchase & Stores Officer, Semi- Conductor Laboratory, Sector-72, Mohali-160071.</p>	Yes / No / Explain	

8	<p>Delivery Period: The vendor shall specify their best delivery period.</p> <p>The said delivery period shall include the installation and commissioning of equipment after receipt of the same at SCL.</p> <p>The vendor shall also provide break-up of the delivery period for (i) Supply (ii) Installation & commissioning from the date of receipt of intimation on readiness of site.</p>	Yes / No / Explain	
9	<p>Liquidated Damages (LD): If the Vendor fails to deliver the stores within the time specified in the contract or any extension thereof, the purchaser shall recover from the Vendor as liquidated damages a sum of one-half of one percent (0.5 percent) of the Contract price for each calendar week of delay. The total liquidated damages shall not exceed ten percent (10 percent) of the Contract price. Delivery of stores means supply, Installation, commissioning and acceptance as applicable.</p>	Yes / No / Explain	
10	<p>Terms of payment: The payment shall be remitted as under: 90% of the PO value 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 equipment Purchasers site against a Performance Bank Guarantee.</p>	Yes / No / Explain	

11	<p>Warranty: The Vendor shall provide for the tendered equipment comprehensive warranty for parts as well as labour for a period of 24 months from the date of successful installation, commissioning and acceptance of the equipment at Purchaser site at no extra charges to Purchaser. In case any defect/faulty workmanship arises during warranty period, the Vendor should replace/rectify the same at its own cost at site/works of the Purchaser.</p> <p>All expenses on the visit(s) of the vendor engineer such as To and Fro travel costs, local transportation, boarding and lodging etc. during warranty shall be borne by the contractor.</p> <p>Vendor has to provide two preventative visits during warranty period of the tool. Vendor to provide all consumables and spares which will be required during preventive maintenance during the period of warranty.</p> <p>Vendor to guarantee 95% uptime for the equipment based on 24 hours working, 7 days a week.</p>	Yes / No / Explain	
12	<p>Performance Bank Guarantee (PBG): The Vendor shall furnish a Bank Guarantee (as per format given by purchaser) from any nationalized/scheduled bank for an amount equivalent to 3 percent (three percent) 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 Vendor without any interest.</p>	Yes / No / Explain	

13	<p>Warranty Replacements: If in the opinion of the purchaser it becomes necessary to replace or repair defective equipment during the warranty period, such replacement or repair shall be made by the Vendor free of all costs to the Purchaser provided the notice informing the Vendor of the defect is given by the Purchaser in this regard, within period of 26 months from the date of acceptance thereof.</p> <p>All replacement parts during the warranty period 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 shall be returned by Purchaser to the Contractor, if requested, on Freight to pay basis after receipt of replacement parts.</p>	Yes / No / Explain	
14	<p>POST WARRANTY SERVICE/SUPPORT: The Vendor shall provide spare and maintenance support for 10 years after expiry of warranty period.</p> <p>Vendor to quote separately for post warranty labour only AMC charges per year for a period of 05 years.</p> <p>The quote for post warranty AMC shall be indicated under Additional column of Price Bid Form. (This would be for reference only and same shall not be considered during commercial evaluation of the tendered item.)</p>	Yes / No / Explain	
15	<p>SUPPLY OF SPARES AND CONSUMABLES: The Vendor to provide separately the itemized price list of recommended essential spares and consumables which will be required to maintain above stated tool uptime.</p> <p>The price for recommended essential spares shall be indicated under Additional Column of Price Bid Form. This would be for reference only and same shall not be considered during commercial /price bid evaluation of the tendered item.</p>	Yes / No / Explain	

16	<p>New Machine Certificate: The vendor shall submit a certificate alongwith the equipment as well as with the documents for claiming payment indicating the date of manufacture and certifying that the equipment supplied is brand new equipment and not used/refurbished/remanufactured/reconditioned equipment.</p>	Yes / No / Explain	
17	<p>. Replacement: If the stores or any portion thereof is damaged or lost during transit, the Purchaser shall give notice to the Vendor setting forth particulars of such stores damaged or lost during transit. The replacement of such stores shall be effected by the vendor 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>	Yes / No / Explain	
18	<p>REJECTION : In the event that any of the stores supplied by the Vendor is found defective in material or workmanship or otherwise not in conformity with the requirements of the Contract specifications, the purchaser shall either reject the stores or request the Contractor, in writing, to rectify the same. The Contractor, on receipt of such notification, shall either rectify or replace the defective stores free of cost to the purchaser. If the Vendor fails to do so, the purchaser may at his option either :</p> <p>a)replace or rectify such defective stores and recover the extra cost so involved from the Contractor, or b) terminate the Contract for default or c) acquire the defective stores at a reduced price considered equitable under the circumstances. The provision of this article shall not prejudice the Purchasers rights under LD clause.</p>	Yes / No / Explain	

19	<p>Validity: The offer should be valid for a minimum period of 120 days from the date of opening of Tehno-Commercial bid and 90 days after opening of Price Bid.</p>	Yes / No / Explain	
20	<p>Installation and Commissioning: Installation, commissioning, and demonstration of performance of the tendered stores as per Purchaser tendered specifications shall be carried out by the Vendor at Purchaser s site at S.A.S. Nagar, Punjab, India.</p> <p>The vendor shall provide in advance guidelines for preparation of installation site and list of items to be supplied by Purchaser during installation.</p> <p>On receipt of intimation from the Purchaser, the Vendor shall depute its engineer to the Purchaser site within agreed time frame mentioned in the PO 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 Vendor 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 get full refund of the payment made and the interest thereon. Decision regarding successful installation and commissioning shall rest solely with the Purchaser.</p>	Yes / No / Explain	
21	<p>Insurance of Stores: Transit insurance shall be the responsibility of the vendor.</p>	-	
22	<p>Technical Documentation: The vendor shall provide technical documentation covering operation, maintenance and schematic as specified in the technical specifications. All documentation shall be in English language only.</p>	-	

23	<p>Packing & Forwarding: The Vendor 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 responsible for all damages due to improper packing.</p>	-	
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24	<p>Arbitration: In the event of any dispute/s, difference/s or claim/s arising out of or relating to the interpretation and application of the Contract, such dispute/s or difference/s or claim/s shall be settled amicably by mutual consultations of the good Offices of the respective Parties and recognizing their mutual interests attempt to reach a solution satisfactory to both the parties. If such a resolution is not possible, within 30 days from the date of receipt of written notice of the existence of such dispute/s, then the unresolved dispute/s or difference/s or claim/s shall be referred to the Sole Arbitrator appointed by the Parties by mutual consent in accordance with the rules and procedures of Arbitration and Conciliation Act 1996 as amended from time to time. The arbitration shall be conducted in New Delhi in the Arbitration and Conciliation Centre New Delhi (Domestic and International) as per its rules and regulations. The expenses for the Arbitration shall be shared equally or as may be determined by the Arbitrator. The considered and written decision of the Arbitrator shall be final and binding between the Parties. The applicable language for Arbitration shall be English only. Work under the Contract shall be continued by the VENDOR during the pendency of arbitration proceedings, without prejudice to a final adjustment in accordance with the decision of the Arbitrator unless otherwise directed in writing by the Purchaser or unless the matter is such that the works cannot be possibly continued until the decision (whether final or interim) of the Arbitrator is obtained.</p>	-	
25	<p>Applicable Law: The Contract shall be interpreted, construed and governed by the laws of India.</p>	-	
26	<p>Indicate the Name & address of the vendor for placing purchase order along with their e-mail id , contact person name & designation , Telephone no. and fax no.</p>	-	

27	Any Other Term:	-	
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C.3 Price Bid

Sl. No.	Item	Quantity	Unit Price	Currency	Total Price	Remark
1	SUPPLY, INSTALLATI ON & COMMISSIO NING OFICP Reactive Ion ETCH Tool ËËË For Poly Silicon Etching	1.00 Nos.		-		

Common charges (Applicable for all items)

Post Warranty AMC Charges per Year	
Cost of Spares & Consumables if applicable	