

Notice Inviting Quotation (E-Procurement mode)

INDIAN INSTITUTE OF TECHNOLOGY DELHI

HAUZ KHAS, NEW DELHI-110016

Dated: 18/04/2018

Open Tender Notice No. IITD/BEEN(SP-1625)/2018

Old Tender Ref. No. IITD/BEEN(SP-1502)/2018 & Tender ID 2018_IIT_299780_1

Indian Institute of Technology Delhi is in the process of purchasing following item(s) as per details as given as under.

Details of the item	Glove Box Integrated System
Earnest Money Deposit to be submitted	Rs. NIL
Warranty	3 Years
Performance security	5% of FOB Value

Tender Documents may be downloaded from Central Public Procurement Portal <http://eprocure.gov.in/eprocure/app>. Aspiring Bidders who have not enrolled / registered in e-procurement should enroll / register before participating through the website <http://eprocure.gov.in/eprocure/app>. The portal enrolment is free of cost. Bidders are advised to go through instructions provided at 'Instructions for online Bid Submission'.

Tenderers can access tender documents on the website (For searching in the NIC site, kindly go to Tender Search option and type 'IIT'. Thereafter, Click on "GO" button to view all IIT Delhi tenders). Select the appropriate tender and fill them with all relevant information and submit the completed tender document online on the website <http://eprocure.gov.in/eprocure/app> as per the schedule given in the next page.

No manual bids will be accepted. All quotation (both Technical and Financial should be submitted in the E-procurement portal).

Schedule

Name of Organization	Indian Institute of Technology Delhi
Tender Type (Open/Limited/EOI/Auction/Single)	Open
Tender Category (Services/Goods/works)	Goods
Type/Form of Contract (Work/Supply/ Auction/Service/Buy/Empanelment/ Sell)	Supply
Product Category (Civil Works/Electrical Works/Fleet Management/ Computer Systems)	Others
Source of Fund (Institute/Project)	Project
Is Multi Currency Allowed	YES
Date of Issue/Publishing	18/04/2018 (12:00Hrs)
Document Download/Sale Start Date	18/04/2018 (12:00Hrs)
Document Download/Sale End Date	09/05/2018 (15:00 Hrs)
Date for Pre-Bid Conference	20/04/2018 (11:00Hrs)
Venue of Pre-Bid Conference	Store & Purchase Section, IIT Delhi, Hauz Khas.
Last Date and Time for Uploading of Bids	09/05/2018 (15:00 Hrs)
Date and Time of Opening of Technical Bids	10/05/2018 (15:00 Hrs)
Tender Fee	Rs. NIL_____/- (For Tender Fee)
EMD	Rs. NIL_____/- (For EMD) (To be paid through RTGS/NEFT. IIT Delhi Bank details are as under: Name of the Bank A/C : IITD Revenue Account SBI A/C No. : 10773572622 Name of the Bank : State Bank of India, IIT Delhi, HauzKhas, New Delhi-110016 IFSC Code : SBIN0001077 MICR Code : 110002156 Swift No. : SBININBB547 (This is mandatory that UTR Number is provided in the on- line quotation/bid. (Kindly refer to the UTR Column of the Declaration Sheet at Annexure-II)
No. of Covers (1/2/3/4)	02
Bid Validity days (180/120/90/60/30)	180 days (From last date of opening of tender)
Address for Communication	Dr. Anuj Dhawan, Electrical Engineering Department, Indian Institute of Technology, Hauz Khas, New Delhi-110016
Contact No.	9810087814
Email Address	adhawan@ee.iitd.ac.in

**Chairman Purchase Committee
(Buyer Member)**

Instructions for Online Bid Submission:

As per the directives of Department of Expenditure, this tender document has been published on the Central Public Procurement Portal ([URL:http://eprocure.gov.in/eprocure/app](http://eprocure.gov.in/eprocure/app)). The bidders are required to submit soft copies of their bids electronically on the CPP Portal, using valid Digital Signature Certificates. The instructions given below are meant to assist the bidders in registering on the CPP Portal, prepare their bids in accordance with the requirements and submitting their bids online on the CPP Portal.

More information useful for submitting online bids on the CPP Portal may be obtained at:

<http://eprocure.gov.in/eprocure/app>

REGISTRATION

- 1) Bidders are required to enroll on the e-Procurement module of the Central Public Procurement Portal ([URL:http://eprocure.gov.in/eprocure/app](http://eprocure.gov.in/eprocure/app)) by clicking on the link “Click here to Enroll”. Enrolment on the CPP Portal is free of charge.
- 2) As part of the enrolment process, the bidders will be required to choose a unique username and assign a password for their accounts.
- 3) Bidders are advised to register their valid email address and mobile numbers as part of the registration process. These would be used for any communication from the CPP Portal.
- 4) Upon enrolment, the bidders will be required to register their valid Digital Signature Certificate (Class II or Class III Certificates with signing key usage) issued by any Certifying Authority recognized by CCA India (e.g. Sify / TCS / nCode / eMudhra etc.), with their profile.
- 5) Only one valid DSC should be registered by a bidder. Please note that the bidders are responsible to ensure that they do not lend their DSCs to others which may lead to misuse.
- 6) Bidder then logs in to the site through the secured log-in by entering their userID / password and the password of the DSC / eToken.

SEARCHING FOR TENDER DOCUMENTS

- 1) There are various search options built in the CPP Portal, to facilitate bidders to search active tenders by several parameters. These parameters could include Tender ID, organization name, location, date, value, etc. There is also an option of advanced search for tenders, wherein the bidders may combine a number of search parameters such as organization name, form of contract, location, date, other keywords etc. to search for a tender published on the CPP Portal.
- 2) Once the bidders have selected the tenders they are interested in, they may download the required documents / tender schedules. These tenders can be moved to the respective ‘My Tenders’ folder. This would enable the CPP Portal to intimate the bidders through SMS / e-mail in case there is any corrigendum issued to the tender document.
- 3) The bidder should make a note of the unique Tender ID assigned to each tender, in case they want to obtain any clarification / help from the Helpdesk.

PREPARATION OF BIDS

- 1) Bidder should take into account any corrigendum published on the tender document before submitting their bids.
- 2) Please go through the tender advertisement and the tender document carefully to understand the documents required to be submitted as part of the bid. Please note the number of covers in which the

bid documents have to be submitted, the number of documents - including the names and content of each of the document that need to be submitted. Any deviations from these may lead to rejection of the bid.

- 3) Bidder, in advance, should get ready the bid documents to be submitted as indicated in the tender document / schedule and generally, they can be in PDF / XLS / RAR / DWF formats. Bid documents may be scanned with 100 dpi with black and white option.
- 4) To avoid the time and effort required in uploading the same set of standard documents which are required to be submitted as a part of every bid, a provision of uploading such standard documents (e.g. PAN card copy, annual reports, auditor certificates etc.) has been provided to the bidders. Bidders can use “My Space” area available to them to upload such documents. These documents may be directly submitted from the “My Space” area while submitting a bid, and need not be uploaded again and again. This will lead to a reduction in the time required for bid submission process.

SUBMISSION OF BIDS

- 1) Bidder should log into the site well in advance for bid submission so that he/she upload the bid in time i.e. on or before the bid submission time. Bidder will be responsible for any delay due to other issues.
- 2) The bidder has to digitally sign and upload the required bid documents one by one as indicated in the tender document.
- 3) Bidder has to select the payment option as “on-line” to pay the tender fee / EMD as applicable and enter details of the instrument. Whenever, EMD / Tender fees is sought, bidders need to pay the tender fee and EMD separately on-line through RTGS (Refer to Schedule, Page No.2).
- 4) A standard BoQ format has been provided with the tender document to be filled by all the bidders. Bidders are requested to note that they should necessarily submit their financial bids in the format provided and no other format is acceptable. Bidders are required to download the BoQ file, open it and complete the white coloured (unprotected) cells with their respective financial quotes and other details (such as name of the bidder). No other cells should be changed. Once the details have been completed, the bidder should save it and submit it online, without changing the filename. If the BoQ file is found to be modified by the bidder, the bid will be rejected.

OR

In some cases Financial Bids can be submitted in PDF format as well (in lieu of BOQ).

- 5) The server time (which is displayed on the bidders’ dashboard) will be considered as the standard time for referencing the deadlines for submission of the bids by the bidders, opening of bids etc. The bidders should follow this time during bid submission.
- 6) All the documents being submitted by the bidders would be encrypted using PKI encryption techniques to ensure the secrecy of the data. The data entered cannot be viewed by unauthorized persons until the time of bid opening. The confidentiality of the bids is maintained using the secured Socket Layer 128 bit encryption technology. Data storage encryption of sensitive fields is done.
- 7) The uploaded tender documents become readable only after the tender opening by the authorized bid openers.
- 8) Upon the successful and timely submission of bids, the portal will give a successful bid submission message & a bid summary will be displayed with the bid no. and the date & time of submission of the bid with all other relevant details.
- 9) Kindly add scanned PDF of all relevant documents in a single PDF file of compliance sheet.

ASSISTANCE TO BIDDERS

- 1) Any queries relating to the tender document and the terms and conditions contained therein should be addressed to the Tender Inviting Authority for a tender or the relevant contact person indicated in the tender.
- 2) Any queries relating to the process of online bid submission or queries relating to CPP Portal in general may be directed to the 24x7 CPP Portal Helpdesk. The contact number for the helpdesk is 1800 233 7315.

General Instructions to the Bidders

- 1) The tenders will be received online through portal <http://eprocure.gov.in/eprocure/app> . In the Technical Bids, the bidders are required to upload all the documents in .pdf format.
- 2) Possession of a Valid Class II/III Digital Signature Certificate (DSC) in the form of smart card/e- token in the company's name is a prerequisite for registration and participating in the bid submission activities through <https://eprocure.gov.in/eprocure/app>. Digital Signature Certificates can be obtained from the authorized certifying agencies, details of which are available in the web site <https://eprocure.gov.in/eprocure/app> under the link “Information about DSC”.
- 3) Tenderer are advised to follow the instructions provided in the ‘Instructions to the Tenderer for the e-submission of the bids online through the Central Public Procurement Portal for e Procurement at <https://eprocure.gov.in/eprocure/app>.

Electrical Engineering Department
Indian Institute of Technology
Hauz Khas, New Delhi-110 016

NOTICE INVITING QUOTATIONS

Dated: 18/04/2018

Subject: Glove Box Integrated System

Invitation for Tender Offers

Indian Institute of Technology Delhi invites online Bids (Technical bid and Commercial bid) from eligible and experienced OEM (Original Equipment Manufacturer) OR OEM Authorized Dealer for **supply, installation & integration** of a **Glove Box Integrated System** with (warranty period as stated at page #1 of this tender) on site comprehensive warranty from the date of receipt of the material as per terms & conditions specified in the tender document, which is available on CPP Portal <http://eprocure.gov.in/eprocure/app>

- All the **items** mentioned below (**A, B, C, D, E, and F**) should be **quoted individually** as the technical and financial comparison for each item will be done separately.
- If a vendor cannot supply any **item(s)** (from the items A, B, C, D, E, and F mentioned below), then they should mention “**not quoted**” for that/those **item(s)** in their technical and financial bids.
- The manufacturer of **items B** and **C** should be the same.

TECHNICAL SPECIFICATIONS:

A. Multi-port Glove Box	
1. Glove box should have capability to interconnect with another Glove box as asked for in option	
2. 4 port Stainless steel glove box for integration with other systems (such as Thermal & E-beam evaporation system and organic evaporation system), quality not less than US304L with maximal internal dimensions L/H/P 1800 x 900 x 300-400 mm.	
3. Real modular glove box with dismountable side panels; tightness of side panels imperatively secured through butyl sealing.	
4. The glove box should have compatible to integrate an additional glove box module.	
5. Stand in stainless steel with rolls and jacks.	
6. All pipings in Stainless Steel US304L	
7. Front panel in sapphire coated Polycarbonate, with glove rings in diam.approx.220 mm.	
8. Total 8 glove rings, 4 glove rings access and other 4 glove rings for evaporator door maintaining these 4 glove rings at evaporator integration side for easy access of door closing and opening,	
a. Butyl gloves not less than 0.6 mm thickness.	
9. Tightness of glove box according to O2-increase method . Class 1 glove box (according to International Standards ISO 10648-2 – Leak rate < 0.05 Vol%/h).	

10. Two mini chamber each side with diameter 150 mm, length 400mm.	
11. Leak rate 10^{-5} mbar.l/s (tested with helium mass spectrometer).	
12. Equipped with 3 way valve and 2 doors.	
13. Location of vacuum chamber can be on each side.	
14. One Purification unit <math>< 1</math> ppm O ₂ and H ₂ O with minimal capacity of : O ₂ = 30L and H ₂ O > 1400 g.	
15. All piping and components must be in stainless steel (US304L).	
16. Recirculation blower , type brushless motor mounted inside a stainless steel housing, with flow 40m ³ /h with $\Delta P = 20\text{mbar}$ (up to 110m ³ /h $\Delta P = 0\text{mbar}$ at 230V/50Hz).	
17. Regeneration Process: Automatic process, Inlet and outlet regeneration gas through electrovalves (solenoid valves) (ENERGY SAVING mode)	
18. Heating of reactor: Integrated temperature regulation controlled through automatic and temperature cut out.	
19. Tightness : Leak rate <math>< 10^{-5}</math> mbar.L/ sec (tested with helium mass spectrometer)	
20. Regenerating gas: 95% N ₂ or Ar + 5% H ₂ .	
21. No water chiller needed or admitted (ENERGY SAVING mode)	
22. Automatic adjustable pressure regulation , never connected and never linked to the vacuum pump. Pressure regulation required without foot pedal and the vacuum pump will have to be switched-off when vacuum chamber(s) will not be used (ENERGY SAVING mode).	
23. One pressure safety release valve with HEPA filter for comfort and automatic mechanical discharge of exceeded gases in the glove box (ENERGY SAVING mode) allowing full automatic pressure adjustment with no need for foot pedal, most reactive pressure adjustment, increased comfort in handlings, excess gas discharge possible even in case of power cut.	
24. O₂ Analyzer : Ranges in ppm: (0-100/1-1000/0-10000), Ranges in %: (0-1/0-10/0-25). Electronics: Integrated microprocessor control, selection of ranges, calibration. Dual display of values – Touch Screen and inline display on the analyzer to verification of values in the touch screen. Data Readings: 2 wire loop powered connection via a 4-20 mA Analog output. Accuracy: +/- 1 ppm in full range. Repeatability: +/- 1% in full range Resolution: 0.1 ppm in full range	
25. H₂O analyzer : capacitive sensor type, Measuring Range: 0 – 23000 ppm & -100/+20 °C (Dew Point), delivered with calibration certificate – Technology requiring no maintenance with phosphoric acid or similar.	
26. Glove box controlled through PLC – Display on colour touch screen. Colour touch screen with 65K colour screen. LED retro lighting. Resolution 800 x 480 pixels. Windows CE professional interface. Continuous control, graphic seeing of datas (O ₂ , Pressure, Temperature) and automatic recording each 2 minutes. Historical period 2 months, adjustable alarms for oxygen (and in future moisture) concentrations.	
27. Glove box flushing mode available from touchscreen with adjustable time and automatic stop at the end of elapsed time.	
28. Warning display in case of recirculation blower stop.	
29. Low noise level 49 dB(A) under purification and pressure regulation (ENERGY SAVING mode)	

30. ENERGY SAVING mode required ensuring low power consumption features (max power consumption around 500W, in Energy saving mode around 40W, i.e. around 90% energy saving).	
31. Lightning of the working area of the glove box through Led light spots from the ceiling of the glove box for improved brightness.	
32. 1 leaktight electrical feedthrough Bi + T 220V and at least 4 blanked leaktight feedthroughs on the back side.	
33. 2 leaktight vacuum feedthrough	
34. INTEGRATION FOR following:	
35. Two No PVD in 4 port glove box which will have sliding door, Cut out, dowel and flat gasket. The drawing for evaporator integration with glove box will be provided	
36. Coordination of integration of evaporator integration between glove box supplier and thermal evaporator is mandatory. Past experience of similar exchange between glove box supplier and evaporator supplier is preferable.	
37. At least 10 satisfied glove boxes installations in India with details to be provided.	
38. Full Warranty – 3 years	
39. Spare glove – 2 pairs	
40. Spare O ring for gloves – 2 Pairs	
41. Spare O ring for chamber – 2 pairs.	
B. Thermal and E-Beam Evaporation System for Integration with a Glove Box	
Supply and installation of E-beam and Thermal Evaporation system (with a turbo pump) for integrating with a Glove Box, the system comprising of:	
1. Glove box compatible chamber with sliding door inside glove box and swing door in the opposite side.	
2. Chamber should have ports for Glancing angle deposition attachment, ports/arrangement to fit thermal evaporation electrodes, arrangement to fit 2cc 4 pocket Ebeam source with associated feedthroughs, port for quartz crystal monitor, ports backing rouging arrangement, port for pump (CF100).	
3. Flange mounted Glancing angle deposition attachment for 2" dia. sample with heating arrangement upto 300 °C along with programmable PID controller.	
4. Thermal evaporator arrangement with variac and transformer (10V 150amps), water cooled cables and tungsten boats (at least 10 nos.).	
5. 2cc, 4 pocket 3KW ebeam source with appropriate power supply, feedthroughs, indexing arrangement for crucible etc (Make Telemark, MDC Vacuum Products, Kurt J. Lesker or equivalent).	
6. Digital thickness monitor with display and 10 spare crystals.	
7. Backing rouging arrangement for chamber with pneumatic valves. (preferably KF 25 flange)	
8. SS gate valve. Shaft bellow-sealed with CF 100 flange.	

9. Suitable frame to support the chamber while attached to glove box.	
10. Suitable instrumentation rack for all electronics etc.	
11. PID programmable recirculating water chiller of at least 1.5KW capacity.	
12. Water flow and vacuum interlock for safe operation of ebeam.	
13. Turbo pump (Make Equivalent to Pfeiffer Vacuum, Edwards, or Agilent with pumping speed greater than or equal to 250 litres/second) with suitable dry backing pump and gauges (cold cathode gauge and Pirani gauge or full range gauge) along with display, control unit, cables etc.	
C. Organic Evaporation System for Integration with a Glove Box	
Supply and installation of Organic Evaporation system with turbo pump for integrating with a Glove Box, the system comprising of:	
1. Vacuum chamber attached to glove box with ports for access through glove box, quick access door for general use, ports for other accessories like matrix assisted pulsed laser evaporation, sample holder, organic effusion cells, Quartz crystal monitor, backing roughing, pump port (CF 150), laser entry port, gas inlet port etc.	
2. Matrix assisted pulsed laser evaporation attachment (LN2 cooled target holder).	
3. Sample holder with heating upto 200 °C with programmable PID controller.	
4. Organic effusion cells 2 nos. with programmable PID controller. Quartz liners for these cells to be provided 10 each.	
5. Quartz crystal monitor with display.	
6. Pneumatic valves, metal hose pipes and fittings for backing/roughing arrangement for chamber.	
7. SS gate valve, Manual operation. Shaft bellow-sealed with CF 150 flange.	
8. Appropriate frame to mount the chamber.	
9. Instrumentation rack to mount various instruments.	
10. Lens attachment consisting of XYZ movable lens, laser entry window. Lens holder should be flange mounted to free the space on table.	
11. Turbo pump (Make equivalent to Pfeiffer Vacuum, Edwards, or Agilent, with pumping speed greater than or equal to 600 litres/second) with suitable dry backing pump and gauges (1 cold cathode gauge and 2 nos. Pirani gauge) along with display, control unit, cables etc.	
D. Reactive Ion Etching System for Integration with a Glove Box	
The RIE system must be designed for modularity, process flexibility and simple use for all processes that are compatible with the wafer direct loading. System should be compatible for wide variety of etch processes, e. g. etching of Si, SiO ₂ , metals, III-V compounds and polymer.	
1. RIE process chamber:	
• The process chamber should be machined from a solid block of aluminum	
• Large area Showerhead suitable for uniformity up to 200mm diameter wafers	
• Front viewport fitted with an RF shield for viewing the plasma	

<ul style="list-style-type: none"> • Suitable blanked fitting provided for OES end-point or other characterization tools 	
<ul style="list-style-type: none"> • Electrically heated chamber walls to 50 °C or more 	
<ul style="list-style-type: none"> • Leakage rate @ room temperature < 2E-4 mbar l/s 	
2. Table/Lower Electrode	
<ul style="list-style-type: none"> • Electrodes should be designed for uniform processing on up to 200mm wafers. The electrodes should be at least 210 mm diameter. Diameter with shield should be 240mm or bigger 	
<ul style="list-style-type: none"> • Suitable gauges for process pressure measurement and for base pressure measurement 	
<ul style="list-style-type: none"> • RF Plasma source should be fitted complete with 600 W, 13.56MHz RF generator and directly coupled automatic matching unit 	
3. Temperature control	
<ul style="list-style-type: none"> • Compatible Julabo chiller to be quoted as optional 	
4. Vacuum and pumps	
<ul style="list-style-type: none"> • Automatic Pressure Controller (APC) 	
<ul style="list-style-type: none"> • Suitable gauges for process pressure measurement and for base pressure measurement. 	
<ul style="list-style-type: none"> • At least 150L/s turbo molecular pump (TMP) must be supplied 	
<ul style="list-style-type: none"> • Base pressure < 10⁻⁵ mbar 	
<ul style="list-style-type: none"> • Suitable backing pump should be provided 	
5. Gas-Box and Gas Lines	
<ul style="list-style-type: none"> • Gas box should be able to accommodate upto 8 ‘mass flow controlled’ gas lines 	
<ul style="list-style-type: none"> • 4 gas-lines for non-toxic gasses should be provided <ul style="list-style-type: none"> - Each gas line should have a particle filter and cut-off valve 	
<ul style="list-style-type: none"> - 2 MFCs should be provided and 2 MFCs can be optional 	
6. Power	
<ul style="list-style-type: none"> • Separate mains box for 3 phase power supply, 	
<ul style="list-style-type: none"> • Electrical interface between etcher and user’s power supply 	
<ul style="list-style-type: none"> • An automatic matching network to minimize the reflected power. 	
<ul style="list-style-type: none"> • RF generator 13.56MHz, 600W 	
<ul style="list-style-type: none"> • Pre-selection and control of forward power 	
<ul style="list-style-type: none"> • Measuring and visualization of forward, reflected power and dc bias voltage 	
<ul style="list-style-type: none"> • Automatic matching network integrated into the RF generator 	
7. Operation and Software	
<ul style="list-style-type: none"> • Windows 7 or 10 application control software with multiple levels of system control. 	
<ul style="list-style-type: none"> • The software must be based on Windows. Its user-friendly interface enables quick and comfortable process development and recipe creation. 	
<ul style="list-style-type: none"> • There should be provision for user to watch the command execution or the process run on the monitor. The settings and the actual values of all analogue parameters are displayed. The software should come with a recipe editor. 	
<ul style="list-style-type: none"> • A process should run automatically unless it is manually interrupted by the user, or when a parameter reaches or is beyond the interrupt limit. Interrupt limits can be defined for all parameters. In the manual mode each step can be executed by mouse click. 	
<ul style="list-style-type: none"> • An extended data logging records all analogue parameters on the PC. 	

• A password controlled user login with a flexible management is supported.	
8. Documentation:	
To be provided with quotation:	
• CE marking confirmation (the system should be CE compliant)	
• Installation documentation	
• Operation and maintenance Manuals on CD, OEM manuals should also be included.	
9. PC	
• State of the art desktop PC	
• Ethernet card	
• Windows 7-32 prof.	
• 23 inch monitor:	
• Keyboard, optical mouse	
10. Commissioning:	
• The systems should be commissioned and demonstrated to meet the technical specifications being specified.	
• Recipes to be provided for all requested processes with starting points and trend information.	
11. Demonstration:	
• The system manufacturer should have its own demonstration facility to demonstrate the equipment if required for evaluation of samples prior to completing technical evaluation.	
12. Training:	
• Operation training to be provided and included in system price.	
13. Maintenance	
• The supplier should have their own trained engineer based in India for support.	
14. The system manufacturer	
• The system manufacturer must have their own application lab, with more than 5 Ph.D. scientists working in that lab, as well as several RIE systems being present in that lab.	
• The system manufacturer must confirm that they have installed a minimum of 200 etching systems worldwide and have supplied a minimum of 5 etching systems in India.	
• System manufacturer must confirm that he runs a free of charge service hotline.	
• Maximum service visit response time should be 2 working days.	
E. Scanning Probe Lithography System for Integration with a Glove Box	
1. Direct write Greyscale nanolithography	
• Insitu inspection provides additional topography information and accuracy	
• Precise overlay and stitching capabilities based on image topography	
• Automatic tip temperature calibration , surface detection and approach	
• Operate in ambient /nitrogen atmosphere	
2. Maximum sample size X,Y,Z - 30 mm ,30mm, 10 mm	
3. Sample material – Transparent, conducting , Magnetic	
4. Patterning	
• Lateral patterning resolution – < 30nm	
• Vertical patterning resolution < 3nm	
• Pattern Pixel time < 30µS	
• Patterning Speed- 0.5mm/s	

5. Topography imaging	
• Lateral imaging resolution – < 10nm	
• Vertical imaging resolution < 0.5nm	
• Imaging Pixel time < 30µS	
• Imaging Speed- 0.5mm/s	
6. Overlay and Stitching	
• Stitching Accuracy <50nm	
• Overlay accuracy < 50nm	
7. XY Scanner	
• Scan Range - 75 µm x 75 µm	
• Position Resolution <0.3nm	
• Resonance frequency without load: 0.5 khz	
8. Z Scanner	
• Scan Range - 15 µm	
• Position Resolution < 0.1nm	
• Resonance frequency without load: 3Khz	
9. Long Range positioning system	
<i>XY Positioner</i>	
• Travel range: 30 mm	
• Sensor Resolution: 1 nm	
• Velocity: up to 10 mm/s	
<i>Z Positioner</i>	
• Travel range: 15 mm	
• Sensor Resolution: 1 nm	
• Velocity: up to 10 mm/s	
10. Optical microscope	
• Resolution (diffraction limit of optics): 3.6 µm	
• Field of View: 1.3 mm x 1 mm	
• Connection: USB	
11. Main Controller Unit	
• Real time processor: 1 GHz	
• Synchronous DAC + ADC channels: 4 + 4 with up to 24bits	
• USB connection: 1	
• Power input: 220 V AC	
12. Software	
• Intuitive user interface and work flow based software should be included	
• Pattern layout input formats - GDSII, JPG, PNG, BMP, TIFF	
13. Consumable for one year: 50 probes, 500mg PPA	
F. Electrical Characterization System for Integration with a Glove Box	
A Class AAA In-line steady state (CW) Solar Simulator system with compatible STC correction, an illuminated area greater than or equal to 50x50mm with at least 150 Watt short Arc Xenon Lamp (No LED/ no fibre Based), and Air Mass Filter AM1.5 Global. The system includes the following:	
1. Light source with light feedback system	
2. Power supply	
3. Manual & automatic shutter control with programmable shutter time (0.1 sec. to 999 sec)	

4. Manual & automatic Air Mass Filter AM1.5 Global	
5. Electromechanical based light source controller	
6. Automatic control of ON/OFF shutter	
7. Two modes of operation: constant intensity and constant power	
8. Selection of power is allowed (between 80% to 120 % of solar irradiance at noon on a terrestrial surface i.e. 1000W/m ²)	
• Light source with intensity feedback for stable output	
9. Forced air cooling	
10. Indicators to indicate the status of the following:	
• Lamp's turning on and turning off	
• Constant Power of Constant Intensity Control	
• Over Temperature alarm	
• Door open Safety Alarm	
11. Intensity control: Ability to set the intensity and calibrate the intensity	
12. System Calibration	
• A calibration cell for the calibration purposes of the setup	
13. Automatic record of lamp's life	
14. System should be upgradable to Advanced I-V software containing curve correction to STC: IEC 80891 (JRC or Anderson), and advance fitting of I-V Curves.	
15. I-V measurement systems including the following:	
• Chuck designed to accommodate all sizes of solar cells	
• A source meter with rating 1A, 200V, and 20W	
• Photodiodes (pyranometer) at source and sample	
• Dedicated I-V measurement software.	
• Shutter control through software	
• Automated Rs calculation in two different intensities	
• Provision in the software to convert to standard measurement conditions	
• Rack mount console for I-V Electronics	
• Software handles measurement of both P type and N type cells without any cell connection changes	
• Calculation of cell series resistance according to IEC 60891 standard	
• Software features include cell sorting in various categories - can be performed in production or in virtual binning modes specified by the user	
16. Manipulator: Manipulator with 9:1 motion ratio and a scan area of 0.10" x 0.180". It should be available with or without the removable extension rod. The joystick micropositioner should be capable of rapidly establishing contact with probing targets within 1 mil. A large X-Y scanning area is augmented by the adjustable "Z" movement of the probe. The spring probe clamp should be electrically isolated from the positioned body.	
17. This solar simulator can either be placed inside a glove box or can be connected to a glove box, for measurements to be carried out inside the glove box	
18. The system manufacturer should have at least 20 installations in India	

OPTIONAL ITEMS

A. Multi-port Glove Box	
1. Second glove box 2 port Stainless steel glove box for thermal evaporator integration, quality not less than US304L with maximal internal dimensions L/H/P 1200 x 900 x 300-400 mm.	

2. Real modular glove box with dismountable side panels; tightness of side panels imperatively secured through butyl sealing.	
3. Total 4 glove rings, 2 glove rings access and other 2 glove rings for evaporator door maintaining these 2 glove rings at evaporator integration side for easy access of door closing and opening,	
a. Butyl gloves not less than 0.6 mm thickness.	
4. Integration of one thermal/ebeam evaporation unit in this glove box which will have sliding door. Cut out, dowel and flat gasket. The drawing for evaporator integration with glove box will be provided.	
5. Integration of one Organic Evaporation System in this glove box which will have sliding door. Cut out, dowel and flat gasket. The drawing for evaporator integration with glove box will be provided.	
B. Thermal and E-Beam Evaporation System for Integration with a Glove Box	
1. Two additional mass flow controllers for the Thermal and E-Beam Evaporation System	
C. Organic Evaporation System for Integration with a Glove Box	
1. Three additional mass flow controllers for the Organic Evaporation System	
D. Reactive Ion Etching System for Integration with a Glove Box	
1. Compatible chiller should be quoted as an optional item for cooling from -10 to +60 deg.	
2. Compatible chiller should be quoted as an optional item for below room temperature, temperature range +5 °C to +40°C	
3. 2 More Mass Flow Controllers (MFCs)	
4. Load lock module for integration with a glove box system	
E. Scanning Probe Lithography System for Integration with a Glove Box	
1. Compatible Vibration isolation	
• Width, length, working height at least 600 mm x 600 mm x 850 mm	
• Vibration isolation workstation with a 58 mm thick breadboard	
• Surface flatness ± 0.15 mm over 600 mm square	
• Load capacity at least 240 kg	
• Isolators should have to reduce transmitted vertical and horizontal vibrations by 85% or more after 5 Hz and by more than 95% after 10 Hz.	
F. Electrical Characterization System for Integration with a Glove Box	
1. Add-On Probe Station with the following features:	
• Probe station suitable for a 2 inch x 2inch wafer	
• Probe station should be small enough to fit on a desk	
• Probe station should have a vacuum chuck	
• The stereo-zoom microscope should be mounted on a boom mount for positioning around the device under test (DUT) after probes have been landed	
• Should include prober, microscope and 2 nos. coaxial manipulators with magnetic lock mechanism base	
• Package of 20 solid tungsten probes	
• Built-in power supply with grounding 3-wire power plug	

• CCTV System including:	
- 1/4" Color CCTV Camera	
- 480 resolution with 1/4" chip camera	
- BNC cable included	
- Power Supply	

A complete set of tender documents* may be Download by prospective bidder free of cost from the website <http://eprocure.gov.in/eprocure/app>. Bidder has to make payment of requisite fees (i.e. Tender fees (if any) and EMD) online through RTGS/NEFT only.

Terms & Conditions Details

Sl. No.	Specification
1.	Due date: The tender has to be submitted on-line before the due date. The offers received after the due date and time will not be considered. No manual bids will be considered.
2.	Preparation of Bids: The offer/bid should be submitted in two bid systems (i.e.) Technical bid and financial bid. The technical bid should consist of all technical details along with commercial terms and conditions. Financial bid should indicate item wise price for the items mentioned in the technical bid in the given format i.e Financial Bids to be submitted in PDF format. The Technical bid and the financial bid should be submitted Online.
3.	EMD (if applicable): The tenderer should submit an EMD amount through RTGS/NEFT. The Technical Bid without EMD would be considered as UNRESPONSIVE and will not be accepted. The EMD will be refunded without any interest to the unsuccessful bidders after the award of contract. Refer to Schedule (at page 1 of this document) for its actual place of submission.
4.	Refund of EMD: The EMD will be returned to unsuccessful Tenderer only after the Tenders are finalized. In case of successful Tenderer, it will be retained till the successful and complete installation of the equipment.
5.	Opening of the tender: The online bid will be opened by a committee duly constituted for this purpose. Online bids (complete in all respect) received along with EMD (if any) will be opened as mentioned at “Annexure: Schedule” in presence of bidders representative if available. Only one representative will be allowed to participate in the tender opening. Bid received without EMD (if present) will be rejected straight way. The technical bid will be opened online first and it will be examined by a technical committee (as per specification and requirement). The financial offer/bid will be opened only for the offer/bid which technically meets all requirements as per the specification, and will be opened in the presence of the vendor’s representatives subsequently for further evaluation. The bidders if interested may participate on the tender opening Date and Time. The bidder should produce authorization letter from their company to participate in the tender opening.
6.	Acceptance/ Rejection of bids: The Committee reserves the right to reject any or all offers without assigning any reason.
7.	Pre-qualification criteria: (i) Bidders should be the manufacturer / authorized dealer. Letter of Authorization from original equipment manufacturer (OEM) on the same and specific to the tender should be enclosed. (ii) An undertaking from the OEM is required stating that they would facilitate the bidder on a regular basis with technology/product updates and extend support for the warranty as well. (Ref. Annexure-II) (iii) OEM should be internationally reputed Branded Company. (iv) Non-compliance of tender terms, non-submission of required documents, lack of clarity of the specifications, contradiction between bidder specification and supporting documents etc. may lead to rejection of the bid. (v) In the tender, either the Indian agent on behalf of the Principal/OEM or Principal/OEM itself can bid but both cannot bid simultaneously for the same item/product in the same tender. (vi) 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 same tender for the same item/product.
8.	Performance Security: The supplier shall require to submit the performance security in the form of irrevocable bank guarantee issued by any Indian Nationalized Bank for an amount which is stated at page #1 of the tender document within 21 days from the date of receipt of the purchase order/LC and should be kept valid for a period of 60 days beyond the date of completion of warranty period.
9.	Force Majeure: The Supplier shall not be liable for forfeiture of its performance security, liquidated damages or termination for default, if and to the extent that, it’s delay in performance or other failure to perform its obligations under the Contract is the result of an event of Force Majeure.

	<ul style="list-style-type: none"> For purposes of this Clause, "Force Majeure" means an event beyond the control of the Supplier and not involving the Supplier's fault or negligence and not foreseeable. Such events may include, but are not limited to, acts of the Purchaser either in its sovereign or contractual capacity, wars or revolutions, fires, floods, epidemics, quarantine restrictions and freight embargoes. If a Force Majeure situation arises, the Supplier shall promptly notify the Purchaser in writing of such conditions and the cause thereof. Unless otherwise directed by the Purchaser in writing, the Supplier shall continue to perform its obligations under the Contract as far as is reasonably practical, and shall seek all reasonable alternative means for performance not prevented by the Force Majeure event.
10.	Risk Purchase Clause: In event of failure of supply of the item/equipment within the stipulated delivery schedule, the purchaser has all the right to purchase the item/equipment from the other source on the total risk of the supplier under risk purchase clause.
11.	Packing Instructions: Each package will be marked on three sides with proper paint/indelible ink, the following: <ol style="list-style-type: none"> Item Nomenclature Order/Contract No. Country of Origin of Goods Supplier's Name and Address Consignee details Packing list reference number
12.	Delivery and Documents: Delivery of the goods should be made within a maximum of 12 to 16 weeks from the date of the opening of LC. Within 24 hours of shipment, the supplier shall notify the purchaser and the insurance company by cable/telex/fax/e mail the full details of the shipment including contract number, railway receipt number/ AAP etc. and date, description of goods, quantity, name of the consignee, invoice etc. The supplier shall mail the following documents to the purchaser with a copy to the insurance company: <ol style="list-style-type: none"> 4 Copies of the Supplier invoice showing contract number, goods' description, quantity unit price, total amount; Insurance Certificate if applicable; Manufacturer's/Supplier's warranty certificate; Inspection Certificate issued by the nominated inspection agency, if any Supplier's factory inspection report; and Certificate of Origin (if possible by the beneficiary); Two copies of the packing list identifying the contents of each package. The above documents should be received by the Purchaser before arrival of the Goods (except where the Goods have been delivered directly to the Consignee with all documents) and, if not received, the Supplier will be responsible for any consequent expenses.
13.	Delayed delivery: If the delivery is not made within the due date for any reason, the Committee will have the right to impose penalty 1% per week and the maximum deduction is 10% of the contract value / price.
14.	Prices: The price should be quoted in net per unit (after breakup) and must include all packing and delivery charges. The offer/bid should be exclusive of taxes and duties, which will be paid by the purchaser as applicable. However the percentage of taxes & duties shall be clearly indicated. The price should be quoted without custom duty and excise duty, since IIT Delhi is exempted from payment of Excise Duty and is eligible for concessional rate of custom duty. Necessary certificate will be issued on demand. In case of imports, the price should be quoted on FOB/FCA origin Airport Basis only. Under special circumstances (eg. perishable chemicals), when the item is imported on CIF/CIP, please indicate CIF/CIP charges separately upto IIT Delhi indicating the mode of shipment. IIT Delhi will

	<p>make necessary arrangements for the clearance of imported goods at the Airport/Seaport. Hence the price should not include the above charges. At any circumstances, it is the responsibility of the foreign supplier to handover the material to our forwarder at the origin airport after completing all the inland clearing. No Ex- Works consignment will be entertained.</p> <p>“In case of CIF/CIP shipments, kindly provide the shipment information at least 2 days in advance before landing the shipment along with the documents i.e. invoice, packing list, forwarder Name, address, contact No. in India to save penalty/demurrage charges (imposed by Indian Customs) . Otherwise these charges will be recovered from the supplier/Indian Agent.”</p>
15.	<p>Notices: For the purpose of all notices, the following shall be the address of the Purchaser and Supplier.</p> <p>Purchaser: Dr. Anuj Dhawan, Electrical Engineering Indian Institute of Technology Hauz Khas, New Delhi - 110016.</p> <p>Supplier: (To be filled in by the supplier) (All supplier’s should submit its supplies information as per Annexure-II).</p> <p>_____</p> <p>_____</p>
16.	<p>Progress of Supply: Wherever applicable, supplier shall regularly intimate progress of supply, in writing, to the Purchaser as under:</p> <ol style="list-style-type: none"> 1. Quantity offered for inspection and date; 2. Quantity accepted/rejected by inspecting agency and date; 3. Quantity dispatched/delivered to consignees and date; 4. Quantity where incidental services have been satisfactorily completed with date; 5. Quantity where rectification/repair/replacement effected/completed on receipt of any communication from consignee/Purchaser with date; 6. Date of completion of entire Contract including incidental services, if any; and 7. Date of receipt of entire payments under the Contract (In case of stage-wise inspection, details required may also be specified).
17.	<p>Inspection and Tests: Inspection and tests prior to shipment of Goods and at final acceptance are as follows:</p> <ul style="list-style-type: none"> • After the goods are manufactured and assembled, inspection and testing of the goods shall be carried out at the supplier’s plant by the supplier, prior to shipment to check whether the goods are in conformity with the technical specifications attached to the purchase order. Manufacturer’s test certificate with data sheet shall be issued to this effect and submitted along with the delivery documents. The purchaser shall be present at the supplier’s premises during such inspection and testing if need is felt. The location where the inspection is required to be conducted should be clearly indicated. The supplier shall inform the purchaser about the site preparation, if any, needed for installation of the goods at the purchaser’s site at the time of submission of order acceptance. • The acceptance test will be conducted by the Purchaser, their consultant or other such person nominated by the Purchaser at its option after the equipment is installed at purchaser’s site in the presence of supplier’s representatives. The acceptance will involve trouble free operation and ascertaining conformity with the ordered specifications and quality. There shall not be any additional charges for carrying out acceptance test. No malfunction, partial or complete failure of any part of the equipment is expected to occur. The Supplier shall maintain necessary log in respect of the result of the test to establish to the entire satisfaction of the Purchaser, the successful completion of the test specified. • In the event of the ordered item failing to pass the acceptance test, a period not exceeding one weeks will be given to rectify the defects and clear the acceptance test, failing which the Purchaser reserve the right to get the equipment replaced by the Supplier at no extra cost to the Purchaser.

	<ul style="list-style-type: none"> • Successful conduct and conclusion of the acceptance test for the installed goods and equipment shall also be the responsibility and at the cost of the Supplier.
18.	<p>Resolution of Disputes: The dispute resolution mechanism to be applied pursuant shall be as follows:</p> <ul style="list-style-type: none"> • In case of Dispute or difference arising between the Purchaser and a domestic supplier relating to any matter arising out of or connected with this agreement, such disputes or difference shall be settled in accordance with the Indian Arbitration & Conciliation Act, 1996, the rules there under and any statutory modifications or re-enactments thereof shall apply to the arbitration proceedings. The dispute shall be referred to the Director, Indian Institute of Technology (IIT) Delhi and if he is unable or unwilling to act, to the sole arbitration of some other person appointed by him willing to act as such Arbitrator. The award of the arbitrator so appointed shall be final, conclusive and binding on all parties to this order. • In the case of a dispute between the purchaser and a Foreign Supplier, the dispute shall be settled by arbitration in accordance with provision of sub-clause (a) above. But if this is not acceptable to the supplier then the dispute shall be settled in accordance with provisions of UNCITRAL (United Nations Commission on International Trade Law) Arbitration Rules. • The venue of the arbitration shall be the place from where the order is issued.
19.	<p>Applicable Law: The place of jurisdiction would be New Delhi (Delhi) INDIA.</p>
20.	<p>Right to Use Defective Goods If after delivery, acceptance and installation and within the guarantee and warranty period, the operation or use of the goods proves to be unsatisfactory, the Purchaser shall have the right to continue to operate or use such goods until rectifications of defects, errors or omissions by repair or by partial or complete replacement is made without interfering with the Purchaser's operation.</p>
21.	<p>Supplier Integrity The Supplier is responsible for and obliged to conduct all contracted activities in accordance with the Contract using state of the art methods and economic principles and exercising all means available to achieve the performance specified in the contract.</p>
22.	<p>Training The Supplier is required to provide training to the designated Purchaser's technical and end user personnel to enable them to effectively operate the total equipment.</p>
23.	<p>Installation & Demonstration The supplier is required to done the installation and demonstration of the equipment within one month of the arrival of materials at the IITD site of installation, otherwise the penalty clause will be the same as per the supply of materials.</p> <p>In case of any mishappening/damage to equipment and supplies during the carriage of supplies from the origin of equipment to the installation site, the supplier has to replace it with new equipment/supplies immediately at his own risk. Supplier will settle his claim with the insurance company as per his convenience. IITD will not be liable to any type of losses in any form.</p>
24.	<p>Insurance: For delivery of goods at the purchaser's premises, the insurance shall be obtained by the supplier in an amount equal to 110% of the value of the goods from "warehouse to warehouse" (final destinations) on "All Risks" basis including War Risks and Strikes. The insurance shall be valid for a period of not less than 3 months after installation and commissioning. In case of orders placed on FOB/FCA basis, the purchaser shall arrange Insurance. If orders placed on CIF/CIP basis, the insurance should be up to IIT Delhi.</p>
25.	<p>Incidental services: The incidental services also include:</p> <ul style="list-style-type: none"> • Furnishing of 01 set of detailed operations & maintenance manual. • Arranging the shifting/moving of the item to their location of final installation within IITD premises at the cost of Supplier through their Indian representatives.
26.	<p>Warranty: (i) Warranty period shall be (as stated at page #2 of this tender) from date of installation of Goods at</p>

	<p>the IITD site of installation. The Supplier shall, in addition, comply with the performance and/or consumption guarantees specified under the contract. If for reasons attributable to the Supplier, these guarantees are not attained in whole or in part, the Supplier shall at its discretion make such changes, modifications, and/or additions to the Goods or any part thereof as may be necessary in order to attain the contractual guarantees specified in the Contract at its own cost and expense and to carry out further performance tests. The warranty should be comprehensive on site.</p> <p>(ii) The Purchaser shall promptly notify the Supplier in writing of any claims arising under this warranty. Upon receipt of such notice, the Supplier shall immediately within in 02 days arrange to repair or replace the defective goods or parts thereof free of cost at the ultimate destination. The Supplier shall take over the replaced parts/goods at the time of their replacement. No claim whatsoever shall lie on the Purchaser for the replaced parts/goods thereafter. The period for correction of defects in the warranty period is 02 days. If the supplier having been notified fails to remedy the defects within 02 days, the purchaser may proceed to take such remedial action as may be necessary, at the supplier's risk and expenses and without prejudice to any other rights, which the purchaser may have against the supplier under the contract.</p> <p>(iii) The warranty period should be clearly mentioned. The maintenance charges (AMC) under different schemes after the expiry of the warranty should also be mentioned. The comprehensive warranty will commence from the date of the satisfactory installation/commissioning of the equipment against the defect of any manufacturing, workmanship and poor quality of the components.</p> <p>(iv) After the warranty period is over, Annual Maintenance Contract (AMC)/Comprehensive Maintenance Contract (CMC) up to next two years should be started. The AMC/CMC charges will not be included in computing the total cost of the equipment.</p>
27.	<p>Governing Language The contract shall be written in English language. English language version of the Contract shall govern its interpretation. All correspondence and other documents pertaining to the Contract, which are exchanged by the parties, shall be written in the same language.</p>
28.	<p>Applicable Law The Contract shall be interpreted in accordance with the laws of the Union of India and all disputes shall be subject to place of jurisdiction.</p>
29.	<p>Notices</p> <ul style="list-style-type: none"> • Any notice given by one party to the other pursuant to this contract/order shall be sent to the other party in writing or by cable, telex, FAX or e mail and confirmed in writing to the other party's address. • A notice shall be effective when delivered or on the notice's effective date, whichever is later.
30.	<p>Taxes Suppliers shall be entirely responsible for all taxes, duties, license fees, octroi, road permits, etc., incurred until delivery of the contracted Goods to the Purchaser. However, VAT in respect of the transaction between the Purchaser and the Supplier shall be payable extra, if so stipulated in the order.</p>
31.	<p>Duties IIT Delhi is exempted from paying custom duty under notification No.51/96 (partially or full) and necessary "Custom Duty Exemption Certificate" can be issued after providing following information and Custom Duty Exemption Certificate will be issued to the shipment in the name of the Institute, (no certificate will be issued to third party): The procured product should be used for teaching, scientific and research work only.</p> <p>a) Shipping details i.e. Master Airway Bill No. and House Airway No. (if exists) b) Forwarder details i.e. Name, Contact No., etc.</p> <p>IIT Delhi is exempted from paying Excise Duty and necessary Excise Duty Exemption Certificate will be provided for which following information are required.</p> <p>b) Quotation with details of Basic Price, Rate, Tax & Amount on which ED is applicable</p>

	c) Supply Order Copy d) Proforma-Invoice Copy.
32.	Agency Commission: Agency commission if any will be paid to the Indian agent in Rupees on receipt of the equipment and after satisfactory installation. Agency Commission will not be paid in foreign currency under any circumstances. The details should be explicitly shown in Tender even in case of Nil commission. The tenderer should indicate the percentage of agency commission to be paid to the Indian agent.
33.	Payment: (i) For imported items Payment will be made through irrevocable Letter of Credit (LC) Cash Against Documents (CAD)/Against delivery/after satisfactory installation by T.T. Letter of Credit (LC) will be established in favour of foreign Supplier after the submission of performance security. The letter of credit (LC) will be established on the exchange rates as applicable on the date of establishment. For Imports, LC will be opened for 100% FOB/CIF value. 80% of the LC amount shall be released on presentation of complete and clear shipping documents and 20% of the LC amount shall be released after the installation and demonstration of the equipment at the INST site of installation in faultless working condition for period of 60 days from the date of the satisfactory installation and subject to the production of unconditional performance bank guarantee as specified in Clause 8 of tender terms and conditions. (ii) For Indigenous supplies, 100% payment shall be made by the Purchaser against delivery, inspection, successful installation, commissioning and acceptance of the equipment at IITD in good condition and to the entire satisfaction of the Purchaser and on production of unconditional performance bank guarantee as specified in Clause 9 of tender terms and conditions. (iii) Indian Agency commission (IAC), if any shall be paid after satisfactory installation & commissioning of the goods at the destination at the exchange rate prevailing on the date of negotiation of LC documents, subject to DGS&D registration for restricted items. (iv) All the bank charges within India will be borne by the Institute and outside India will be borne by the Supplier.
34.	User list: Brochure detailing technical specifications and performance, list of industrial and educational establishments where the items enquired have been supplied must be provided. (Ref. Annexure-III)
35.	Manuals and Drawings (i) Before the goods and equipment are taken over by the Purchaser, the Supplier shall supply operation and maintenance manuals. These shall be in such details as will enable the Purchaser to operate, maintain, adjust and repair all parts of the works as stated in the specifications. (ii) The Manuals shall be in the ruling language (English) in such form and numbers as stated in the contract. (iii) Unless and otherwise agreed, the goods equipment shall not be considered to be completed for the purposes of taking over until such manuals and drawing have been supplied to the Purchaser.
36.	Application Specialist: The Tenderer should mention in the Techno-Commercial bid the availability and names of Application Specialist and Service Engineers in the nearest regional office. (Ref. to Annexure-III)
37.	Site Preparation: The supplier shall inform to the Institute about the site preparation, if any, needed for the installation of equipment, immediately after the receipt of the purchase order. The supplier must provide complete details regarding space and all the other infrastructural requirements needed for the equipment, which the Institute should arrange before the arrival of the equipment to ensure its timely installation and smooth operation thereafter. The supplier shall visit the Institute and see the site where the equipment is to be installed and may offer his advice and render assistance to the Institute in the preparation of the site and other pre-installation requirements.
38.	Spare Parts The Supplier may be required to provide any or all of the following materials, notifications, and

	<p>information pertaining to spare parts manufactured or distributed by the Supplier:</p> <ol style="list-style-type: none"> ii. Such spare parts as the Purchaser may elect to purchase from the Supplier, providing that this election shall not relieve the Supplier of any warranty obligations under the Contract; and iii. In the event of termination of production of the spare parts: iv. Advance notification to the Purchaser of the pending termination, in sufficient time to permit the Purchaser to procure needed requirements; and v. Following such termination, furnishing at no cost to the Purchaser, the blueprints, drawings and specifications of the spare parts, if requested. <p>Supplier shall carry sufficient inventories to assure ex-stock supply of consumable spares for the Goods, such as gaskets, plugs, washers, belts etc. Other spare parts and components shall be supplied as promptly as possible but in any case within six months of placement of order.</p>
39.	<p>Defective Equipment: If any of the equipment supplied by the Tenderer is found to be substandard, refurbished, un-merchantable or not in accordance with the description/specification or otherwise faulty, the committee will have the right to reject the equipment or its part. The prices of such equipment shall be refunded by the Tenderer with 18% interest if such payments for such equipment have already been made. All damaged or unapproved goods shall be returned at suppliers cost and risk and the incidental expenses incurred thereon shall be recovered from the supplier. Defective part in equipment, if found before installation and/or during warranty period, shall be replaced within 45 days on receipt of the intimation from this office at the cost and risk of supplier including all other charges. In case supplier fails to replace above item as per above terms & conditions, IIT Delhi may consider "Banning" the supplier.</p>
40.	<p>Termination for Default</p> <p>The Purchaser may, without prejudice to any other remedy for breach of contract, by written notice of default sent to the Supplier, terminate the Contract in whole or part:</p> <ol style="list-style-type: none"> i. If the Supplier fails to deliver any or all of the Goods within the period(s) specified in the order, or within any extension thereof granted by the Purchaser; or ii If the Supplier fails to perform any other obligation(s) under the Contract. iii If the Supplier, in the judgment of the Purchaser has engaged in corrupt or fraudulent practices in competing for or in executing the Contract. <ul style="list-style-type: none"> ● For the purpose of this Clause: <ol style="list-style-type: none"> i. “Corrupt practice” means the offering, giving, receiving or soliciting of anything of value to influence the action of a public official in the procurement process or in contract execution. ii. “Fraudulent practice” means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of the Borrower, and includes collusive practice among Bidders (prior to or after bid submission) designed to establish bid prices at artificial non-competitive levels and to deprive the Borrower of the benefits of free and open competition;” ● In the event the Purchaser terminates the Contract in whole or in part, the Purchaser may procure, upon such terms and in such manner, as it deems appropriate, Goods or Services similar to those undelivered, and the Supplier shall be liable to the Purchaser for any excess costs for such similar Goods or Services. However, the Supplier shall continue the performance of the Contract to the extent not terminated.
41.	<p>Shifting: After 1-2 years once our new Academic Block will be ready, the supplier has to shift and reinstall the instrument free of cost (if required).</p>
42.	<p>Downtime: During the warranty period not more than 5% downtime will be permissible. For every day exceeding permissible downtime, penalty of 1/365 of the 5% FOB value will be imposed. Downtime will be counted from the date and time of the filing of complaint with in the business hours.</p>
43.	<p>Training of Personnel: The supplier shall be required to undertake to provide the technical training</p>

	to the personnel involved in the use of the equipment at the Institute premises, immediately after completing the installation of the equipment for a minimum period of one week at the supplier's cost.
44.	Disputes and Jurisdiction: Any legal disputes arising out of any breach of contract pertaining to this tender shall be settled in the court of competent jurisdiction located within New Delhi.
45.	Compliance certificate: This certificate must be provided indicating conformity to the technical specifications. (Annexure-I)

**COMPLIANCE SHEET
TECHNICAL SPECIFICATION**

A. Multi-port Glove Box	
	Compliance (Y/N)
1. Glove box should have capability to interconnect with another Glove box as asked for in option	
2. 4 port Stainless steel glove box for integration with other systems (such as Thermal & E-beam evaporation system and organic evaporation system), quality not less than US304L with maximal internal dimensions L/H/P 1800 x 900 x 300-400 mm.	
3. Real modular glove box with dismountable side panels; tightness of side panels imperatively secured through butyl sealing.	
4. The glove box should have compatible to integrate an additional glove box module.	
5. Stand in stainless steel with rolls and jacks.	
6. All pipings in Stainless Steel US304L	
7. Front panel in sapphire coated Polycarbonate, with glove rings in diam.approx.220 mm.	
8. Total 8 glove rings, 4 glove rings access and other 4 glove rings for evaporator door maintaining these 4 glove rings at evaporator integration side for easy access of door closing and opening,	
a. Butyl gloves not less than 0.6 mm thickness.	
9. Tightness of glove box according to O₂-increase method . Class 1 glove box (according to International Standards ISO 10648-2 – Leak rate < 0.05 Vol%/h).	
10. Two mini chamber each side with diameter 150 mm, length 400mm.	
11. Leak rate < 10 ⁻⁵ mbar.l/s (tested with helium mass spectrometer).	
12. Equipped with 3 way valve and 2 doors.	
13. Location of vacuum chamber can be on each side.	
14. One Purification unit < 1 ppm O ₂ and H ₂ O with minimal capacity of : O ₂ = 30L and H ₂ O > 1400 g.	
15. All piping and components must be in stainless steel (US304L).	
16. Recirculation blower , type brushless motor mounted inside a stainless steel housing, with flow 40m ³ /h with ΔP = 20mbar (up to 110m ³ /h ΔP = 0mbar at 230V/50Hz).	
17. Regeneration Process: Automatic process, Inlet and outlet regeneration gas through electrovalves (solenoid valves) (ENERGY SAVING mode)	
18. Heating of reactor: Integrated temperature regulation controlled through automatic and temperature cut out.	

19. Tightness: Leak rate < 10^{-5} mbar.L/ sec (tested with helium mass spectrometer)	
20. Regenerating gas: 95% N2 or Ar + 5% H2.	
21. No water chiller needed or admitted (ENERGY SAVING mode)	
22. Automatic adjustable pressure regulation , never connected and never linked to the vacuum pump. Pressure regulation required without foot pedal and the vacuum pump will have to be switched-off when vacuum chamber(s) will not be used (ENERGY SAVING mode).	
23. One pressure safety release valve with HEPA filter for comfort and automatic mechanical discharge of exceeded gases in the glove box (ENERGY SAVING mode) allowing full automatic pressure adjustment with no need for foot pedal, most reactive pressure adjustment, increased comfort in handlings, excess gas discharge possible even in case of power cut.	
24. O2 Analyzer: Ranges in ppm: (0-100/1-1000/0-10000), Ranges in %: (0-1/0-10/0-25). Electronics: Integrated microprocessor control, selection of ranges, calibration. Dual display of values – Touch Screen and inline display on the analyzer to verification of values in the touch screen. Data Readings: 2 wire loop powered connection via a 4-20 mA Analog output. Accuracy: +/- 1 ppm in full range. Repeatability: +/- 1% in full range Resolution: 0.1 ppm in full range	
25. H2O analyzer: capacitive sensor type, Measuring Range: 0 – 23000 ppm & -100/+20 °C (Dew Point), delivered with calibration certificate – Technology requiring no maintenance with phosphoric acid or similar.	
26. Glove box controlled through PLC – Display on colour touch screen. Colour touch screen with 65K colour screen. LED retro lighting. Resolution 800 x 480 pixels. Windows CE professional interface. Continuous control, graphic seeing of datas (O2, Pressure, Temperature) and automatic recording each 2 minutes. Historical period 2 months, adjustable alarms for oxygen (and in future moisture) concentrations.	
27. Glove box flushing mode available from touchscreen with adjustable time and automatic stop at the end of elapsed time.	
28. Warning display in case of recirculation blower stop.	
29. Low noise level 49 dB(A) under purification and pressure regulation (ENERGY SAVING mode)	
30. ENERGY SAVING mode required ensuring low power consumption features (max power consumption around 500W, in Energy saving mode around 40W, i.e. around 90% energy saving).	
31. Lightning of the working area of the glove box through Led light spots from the ceiling of the glove box for improved brightness.	
32. 1 leaktight electrical feedthrough Bi + T 220V and at least 4 blanked leaktight feedthroughs on the back side.	
33. 2 leaktight vacuum feedthrough	
34. INTEGRATION FOR following:	

35. Two No PVD in 4 port glove box which will have sliding door, Cut out, dowel and flat gasket. The drawing for evaporator integration with glove box will be provided	
36. Coordination of integration of evaporator integration between glove box supplier and thermal evaporator is mandatory. Past experience of similar exchange between glove box supplier and evaporator supplier is preferable.	
37. At least 10 satisfied glove boxes installations in India with details to be provided.	
38. Full Warranty – 3 years	
39. Spare glove – 2 pairs	
40. Spare O ring for gloves – 2 Pairs	
41. Spare O ring for chamber – 2 pairs.	
B. Thermal and E-Beam Evaporation System for Integration with a Glove Box	
Supply and installation of E-beam and Thermal Evaporation system (with a turbo pump) for integrating with a Glove Box, the system comprising of:	
1. Glove box compatible chamber with sliding door inside glove box and swing door in the opposite side.	
2. Chamber should have ports for Glancing angle deposition attachment, ports/arrangement to fit thermal evaporation electrodes, arrangement to fit 2cc 4 pocket Ebeam source with associated feedthroughs, port for quartz crystal monitor, ports backing rouging arrangement, port for pump (CF100).	
3. Flange mounted Glancing angle deposition attachment for 2" dia. sample with heating arrangement upto 300 °C along with programmable PID controller.	
4. Thermal evaporator arrangement with variac and transformer (10V 150amps), water cooled cables and tungsten boats (atleast 10 nos.).	
5. 2cc, 4 pocket 3KW ebeam source with appropriate power supply, feedthroughs, indexing arrangement for crucible etc (Make Telemark, MDC Vacuum Products, Kurt J. Lesker or equivalent).	
6. Digital thickness monitor with display and 10 spare crystals.	
7. Backing roughing arrangement for chamber with pneumatic valves. (preferably KF 25 flange)	
8. SS gate valve. Shaft bellow-sealed with CF 100 flange.	
9. Suitable frame to support the chamber while attached to glove box.	
10. Suitable instrumentation rack for all electronics etc.	
11. PID programmable recirculating water chiller of at least 1.5KW capacity.	
12. Water flow and vacuum interlock for safe operation of ebeam.	

13. Turbo pump (Make Equivalent to Pfeiffer Vacuum, Edwards, or Agilent with pumping speed greater than or equal to 250 litres/second) with suitable dry backing pump and gauges (cold cathode gauge and Pirani gauge or full range gauge) along with display, control unit, cables etc.	
C. Organic Evaporation System for Integration with a Glove Box	
Supply and installation of Organic Evaporation system with turbo pump for integrating with a Glove Box, the system comprising of:	
1. Vacuum chamber attached to glove box with ports for access through glove box, quick access door for general use, ports for other accessories like matrix assisted pulsed laser evaporation, sample holder, organic effusion cells, Quartz crystal monitor, backing roughing, pump port (CF 150), laser entry port, gas inlet port etc.	
2. Matrix assisted pulsed laser evaporation attachment (LN2 cooled target holder).	
3. Sample holder with heating upto 200 °C with programmable PID controller.	
4. Organic effusion cells 2 nos. with programmable PID controller. Quartz liners for these cells to be provided 10 each.	
5. Quartz crystal monitor with display.	
6. Pneumatic valves, metal hose pipes and fittings for backing/roughing arrangement for chamber.	
7. SS gate valve, Manual operation. Shaft bellow-sealed with CF 150 flange.	
8. Appropriate frame to mount the chamber.	
9. Instrumentation rack to mount various instruments.	
10. Lens attachment consisting of XYZ movable lens, laser entry window. Lens holder should be flange mounted to free the space on table.	
11. Turbo pump (Make equivalent to Pfeiffer Vacuum, Edwards, or Agilent, with pumping speed greater than or equal to 600 litres/second) with suitable dry backing pump and gauges (1 cold cathode gauge and 2 nos. Pirani gauge) along with display, control unit, cables etc.	
D. Reactive Ion Etching System for Integration with a Glove Box	
The RIE system must be designed for modularity, process flexibility and simple use for all processes that are compatible with the wafer direct loading. System should be compatible for wide variety of etch processes, e. g. etching of Si, SiO ₂ , metals, III-V compounds and polymers.	
1. RIE process chamber:	
• The process chamber should be machined from a solid block of aluminum	
• Large area Showerhead suitable for uniformity up to 200mm diameter wafers	
• Front viewport fitted with an RF shield for viewing the plasma	
• Suitable blanked fitting provided for OES end-point or other characterization tools	
• Electrically heated chamber walls to 50 °C or more	
• Leakage rate @ room temperature < 2E-4 mbar l/s	
2. Table/Lower Electrode	

<ul style="list-style-type: none"> • Electrodes should be designed for uniform processing on up to 200mm wafers. The electrodes should be at least 210 mm diameter. Diameter with shield should be 240mm or bigger 	
<ul style="list-style-type: none"> • Suitable gauges for process pressure measurement and for base pressure measurement 	
<ul style="list-style-type: none"> • RF Plasma source should be fitted complete with 600 W, 13.56MHz RF generator and directly coupled automatic matching unit 	
3. Temperature control	
<ul style="list-style-type: none"> • Compatible Julabo chiller to be quoted as optional 	
4. Vacuum and pumps	
<ul style="list-style-type: none"> • Automatic Pressure Controller (APC) 	
<ul style="list-style-type: none"> • Suitable gauges for process pressure measurement and for base pressure measurement. 	
<ul style="list-style-type: none"> • At least 150L/s turbo molecular pump (TMP) must be supplied 	
<ul style="list-style-type: none"> • Base pressure <math>10^{-5}</math> mbar 	
<ul style="list-style-type: none"> • Suitable backing pump should be provided 	
5. Gas-Box and Gas Lines	
<ul style="list-style-type: none"> • Gas box should be able to accommodate upto 8 ‘mass flow controlled’ gas lines 	
<ul style="list-style-type: none"> • 4 gas-lines for non-toxic gasses should be provided 	
<ul style="list-style-type: none"> - Each gas line should have a particle filter and cut-off valve 	
<ul style="list-style-type: none"> - 2 MFCs should be provided and 2 MFCs can be optional 	
6. Power	
<ul style="list-style-type: none"> • Separate mains box for 3 phase power supply, 	
<ul style="list-style-type: none"> • Electrical interface between etcher and user’s power supply 	
<ul style="list-style-type: none"> • An automatic matching network to minimize the reflected power. 	
<ul style="list-style-type: none"> • RF generator 13.56MHz, 600W 	
<ul style="list-style-type: none"> • Pre-selection and control of forward power 	
<ul style="list-style-type: none"> • Measuring and visualization of forward, reflected power and dc bias voltage 	
<ul style="list-style-type: none"> • Automatic matching network integrated into the RF generator 	
7. Operation and Software	
<ul style="list-style-type: none"> • Windows 7 or 10 application control software with multiple levels of system control. 	
<ul style="list-style-type: none"> • The software must be based on Windows. Its user-friendly interface enables quick and comfortable process development and recipe creation. 	
<ul style="list-style-type: none"> • There should be provision for user to watch the command execution or the process run on the monitor. The settings and the actual values of all analogue parameters are displayed. The software should come with a recipe editor. 	
<ul style="list-style-type: none"> • A process should run automatically unless it is manually interrupted by the user, or when a parameter reaches or is beyond the interrupt limit. Interrupt limits can be defined for all parameters. In the manual mode each step can be executed by mouse click. 	
<ul style="list-style-type: none"> • An extended data logging records all analogue parameters on the PC. 	
<ul style="list-style-type: none"> • A password controlled user login with a flexible management is supported. 	
8. Documentation:	
To be provided with quotation:	
<ul style="list-style-type: none"> • CE marking confirmation (the system should be CE compliant) 	
<ul style="list-style-type: none"> • Installation documentation 	

<ul style="list-style-type: none"> • Operation and maintenance Manuals on CD, OEM manuals should also be included. 	
9. PC	
<ul style="list-style-type: none"> • State of the art desktop PC 	
<ul style="list-style-type: none"> • Ethernet card 	
<ul style="list-style-type: none"> • Windows 7-32 prof. 	
<ul style="list-style-type: none"> • 23 inch monitor: 	
<ul style="list-style-type: none"> • Keyboard, optical mouse 	
10. Commissioning:	
<ul style="list-style-type: none"> • The systems should be commissioned and demonstrated to meet the technical specifications being specified. 	
<ul style="list-style-type: none"> • Recipes to be provided for all requested processes with starting points and trend information. 	
11. Demonstration:	
<ul style="list-style-type: none"> • The system manufacturer should have its own demonstration facility to demonstrate the equipment if required for evaluation of samples prior to completing technical evaluation. 	
12. Training:	
<ul style="list-style-type: none"> • Operation training to be provided and included in system price. 	
13. Maintenance	
<ul style="list-style-type: none"> • The supplier should have their own trained engineer based in India for support. 	
14. The system manufacturer	
<ul style="list-style-type: none"> • The system manufacturer must have their own application lab, with more than 5 Ph.D. scientists working in that lab, as well as several RIE systems being present in that lab. 	
<ul style="list-style-type: none"> • The system manufacturer must confirm that they have installed a minimum of 200 etching systems worldwide and have supplied a minimum of 5 etching systems in India. 	
<ul style="list-style-type: none"> • System manufacturer must confirm that he runs a free of charge service hotline. 	
<ul style="list-style-type: none"> • Maximum service visit response time should be 2 working days. 	
E. Scanning Probe Lithography System for Integration with a Glove Box	
1. Direct write Greyscale nanolithography	
<ul style="list-style-type: none"> • Insitu inspection provides additional topography information and accuracy 	
<ul style="list-style-type: none"> • Precise overlay and stitching capabilities based on image topography 	
<ul style="list-style-type: none"> • Automatic tip temperature calibration , surface detection and approach 	
<ul style="list-style-type: none"> • Operate in ambient /nitrogen atmosphere 	
2. Maximum sample size X,Y,Z - 30 mm ,30mm, 10 mm	
3. Sample material – Transparent, conducting , Magnetic	
4. Patterning	
<ul style="list-style-type: none"> • Lateral patterning resolution – < 30nm 	
<ul style="list-style-type: none"> • Vertical patterning resolution < 3nm 	
<ul style="list-style-type: none"> • Pattern Pixel time < 30μS 	
<ul style="list-style-type: none"> • Patterning Speed- 0.5mm/s 	
5. Topography imaging	
<ul style="list-style-type: none"> • Lateral imaging resolution – < 10nm 	
<ul style="list-style-type: none"> • Vertical imaging resolution < 0.5nm 	
<ul style="list-style-type: none"> • Imaging Pixel time < 30μS 	
<ul style="list-style-type: none"> • Imaging Speed- 0.5mm/s 	

6. Overlay and Stitching	
• Stitching Accuracy <50nm	
• Overlay accuracy < 50nm	
7. XY Scanner	
• Scan Range - 75 μm x 75 μm	
• Position Resolution <0.3nm	
• Resonance frequency without load : 0.5 khz	
8. Z Scanner	
• Scan Range - 15 μm	
• Position Resolution < 0.1nm	
• Resonance frequency without load : 3Khz	
9. Long Range positioning system	
<i>XY Positioner</i>	
• Travel range: 30 mm	
• Sensor Resolution: 1 nm	
• Velocity: up to 10 mm/s	
<i>Z Positioner</i>	
• Travel range: 15 mm	
• Sensor Resolution: 1 nm	
• Velocity: up to 10 mm/s	
10. Optical microscope	
• Resolution (diffraction limit of optics): 3.6 μm	
• Field of View: 1.3 mm x 1 mm	
• Connection: USB	
11. Main Controller Unit	
• Real time processor: 1 GHz	
• Synchronous DAC + ADC channels: 4 + 4 with up to 24bits	
• USB connection: 1	
• Power input: 220 V AC	
12. Software	
• Intuitive user interface and work flow based software should be included	
• Pattern layout input formats - GDSII, JPG, PNG, BMP, TIFF	
13. Consumable for one year: 50 probes, 500mg PPA	
F. Electrical Characterization System for Integration with a Glove Box	
A Class AAA In-line steady state (CW) Solar Simulator system with compatible STC correction, an illuminated area greater than or equal to 50 mm x 50mm with at least 150 Watt short Arc Xenon Lamp (No LED/ no fibre Based), and Air Mass Filter AM1.5 Global. The system includes the following:	
1. Light source with light feedback system	
2. Power supply	
3. Manual & automatic shutter control with programmable shutter time (0.1 sec. to 999 sec)	
4. Manual & automatic Air Mass Filter AM1.5 Global	
5. Electromechanical based light source controller	
6. Automatic control of ON/OFF shutter	
7. Two modes of operation: constant intensity and constant power	
8. Selection of power is allowed (between 80% to 120 % of solar irradiance at noon on a terrestrial surface i.e. 1000W/m ²)	
• Light source with intensity feedback for stable output	
9. Forced air cooling	

10. Indicators to indicate the status of the following:	
• Lamp's turning on and turning off	
• Constant Power of Constant Intensity Control	
• Over Temperature alarm	
• Door open Safety Alarm	
11. Intensity control: Ability to set the intensity and calibrate the intensity	
12. System Calibration	
• A calibration cell for the calibration purposes of the setup	
13. Automatic record of lamp's life	
14. System should be upgradable to Advanced I-V software containing curve correction to STC: IEC 80891 (JRC or Anderson), and advance fitting of I-V Curves.	
15. I-V measurement systems including the following:	
• Chuck designed to accommodate all sizes of solar cells	
• A source meter with rating 1A, 200V, and 20W	
• Photodiodes (pyranometer) at source and sample	
• Dedicated I-V measurement software	
• Shutter control through software	
• Automated Rs calculation in two different intensities	
• Provision in the software to convert to standard measurement conditions	
• Rack mount console for I-V Electronics	
• Software handles measurement of both P type and N type cells without any cell connection changes	
• Calculation of cell series resistance according to IEC 60891 standard	
• Software features include cell sorting in various categories - can be performed in production or in virtual binning modes specified by the user	
16. Manipulator: Manipulator with 9:1 motion ratio and a scan area of 0.10" x 0.180". It should be available with or without the removable extension rod. The joystick micropositioner should be capable of rapidly establishing contact with probing targets within 1 mil. A large X-Y scanning area is augmented by the adjustable "Z" movement of the probe. The spring probe clamp should be electrically isolated from the positioned body.	
17. This solar simulator can either be placed inside a glove box or can be connected to a glove box, for measurements to be carried out inside the glove box	
18. The system manufacturer should have at least 20 installations in India	

Optional Items

A. Multi-port Glove Box	
1. Second glove box 2 port Stainless steel glove box for thermal evaporator integration, quality not less than US304L with maximal internal dimensions L/H/P 1200 x 900 x 300-400 mm.	
2. Real modular glove box with dismountable side panels; tightness of side panels imperatively secured through butyl sealing.	
3. Total 4 glove rings, 2 glove rings access and other 2 glove rings for evaporator door maintaining these 2 glove rings at evaporator integration side for easy access of door closing and opening,	
a. Butyl gloves not less than 0.6 mm thickness.	

4. Integration of one thermal/ebeam evaporation unit in this glove box which will have sliding door. Cut out, dowel and flat gasket. The drawing for evaporator integration with glove box will be provided.	
5. Integration of one Organic Evaporation System in this glove box which will have sliding door. Cut out, dowel and flat gasket. The drawing for evaporator integration with glove box will be provided.	
B. Thermal and E-Beam Evaporation System for Integration with a Glove Box	
1. Two additional mass flow controllers for the Thermal and E-Beam Evaporation System	
C. Organic Evaporation System for Integration with a Glove Box	
1. Three additional mass flow controllers for the Organic Evaporation System	
D. Reactive Ion Etching System for Integration with a Glove Box	
1. Compatible chiller should be quoted as an optional item for cooling from -10 to +60 deg.	
2. Compatible chiller should be quoted as an optional item for below room temperature, temperature range +5 °C to +40°C	
3. 2 additional Mass Flow Controllers (MFCs) for the reactive ion etching system	
4. Load lock module for integration with a glove box system	
E. Scanning Probe Lithography System for Integration with a Glove Box	
1. Compatible Vibration isolation	
• Width, length, working height at least 600 mm x 600 mm x 850 mm	
• Vibration isolation workstation with a 58 mm thick breadboard	
• Surface flatness ±0.15 mm over 600 mm square	
• Load capacity at least 240 kg	
• Isolators should have to reduce transmitted vertical and horizontal vibrations by 85% or more after 5 Hz and by more than 95% after 10 Hz.	
F. Electrical Characterization System for Integration with a Glove Box	
1. Add-On Probe Station with the following features:	
• Probe station suitable for a 2 inch x 2inch wafer	
• Probe station should be small enough to fit on a desk	
• Probe station should have a vacuum chuck	
• The stereo-zoom microscope should be mounted on a boom mount for positioning around the device under test (DUT) after probes have been landed	
• Should include prober, microscope and 2 nos. coaxial manipulators with magnetic lock mechanism base	
• Package of 20 solid tungsten probes	
- Built-in power supply with grounding 3-wire power plug	
- CCTV System including:	
- 1/4" Color CCTV Camera	
- 480 resolution with 1/4" chip camera	
- BNC cable included	
- Power Supply	

I have also enclosed all relevant documents in support of my claims, (as above) in the following pages.

Signature of Bidder

Name: _____

Designation: _____

Organization Name: _____

Contact No. : _____

**<< Organization Letter Head >>
DECLARATION SHEET**

We, _____ hereby certify that all the information and data furnished by our organization with regard to this tender specification are true and complete to the best of our knowledge. I have gone through the specification, conditions and stipulations in details and agree to comply with the requirements and intent of specification.

This is certified that our organization has been authorized (Copy attached) by the OEM to participate in Tender. We further certified that our organization meets all the conditions of eligibility criteria laid down in this tender document. Moreover, OEM has agreed to support on regular basis with technology / product updates and extend support for the warranty.

The prices quoted in the financial bids are subsidized due to academic discount given to IIT Delhi.

We, further specifically certify that our organization has not been Black Listed/De Listed or put to any Holiday by any Institutional Agency/ Govt. Department/ Public Sector Undertaking in the last three years.	NAME & ADDRESS OF THE Vendor/ Manufacturer / Agent
1 Phone	
2 Fax	
3 E-mail	
4 Contact Person Name	
5 Mobile Number	
6 TIN Number	
7 PAN Number	
(In case of on-line payment of Tender Fees)	
8UTR No. (For Tender Fee)	
(In case of on-line payment of EMD)	
9 UTR No. (For EMD)	

(Signature of the Tenderer)

Name:

Seal of the Company

Bid Submission

Online Bid Submission:

The Online bids (complete in all respect) must be uploaded online in **two** Envelops as explained below:-

Envelope – 1 (Following documents to be provided as single PDF file)			
Sl. No.	Documents	Content	File Types
1.	Technical Bid	Compliance Sheet as per Annexure - I	.PDF
2.		Organization Declaration Sheet as per Annexure - II	.PDF
3.		List of organizations/ clients where the same products have been supplied (in last two years) along with their contact number(s). (Annexure-III)	.PDF
4.		Technical supporting documents in support of all claims made at Annexure-I (Annexure-IV)	.PDF
Envelope – 2			
Sl. No.	TYPES	Content	
1.	Financial Bid	Price bid should be submitted in PDF format.	.PDF

**Electrical Engineering Department
Indian Institute of Technology Delhi
Hauz Khas, New Delhi-110016**

Date: XX/XX/XXXX

Subject: Purchase of <Item> (Following format is used for imported items)

S. No.	Currency	Description and Specification of the Item	Qty. in Units	Unit Price (a)	Agency Commission (If applicable) (b)	Discount (c)	Ex-works price (d=a+b-c)	Packing + Handling + DOC + Inland Freight + FCA Charges (e)	FOB/FCAA irport Price (f=d+e)	Insurance + Freight (g)	CIF Price (f+g)
1											

Note: At any circumstances, it is the responsibility of the foreign supplier to hand over the material to our forwarder at the origin airport after completing all the inland clearing. No Ex-works consignment will be entertained.

For indigenous items please quote as per following format.

S. No.	Description and Specification of the Item	Qty. in Units	Unit Price in Rs.	GST%	Total Price in Rs.
1.					
2.					

Note: The above financial template should be strictly followed. Any deviation from the above template (in terms of description and specification of the item) may lead to cancellation of the tender.