



**Date: 14/02/2019**

**INVITATION OF BIDS FOR PROCUREMENT OF ELECTRON BEAM (E-BEAM)  
PVD SYSTEM**

**ENQUIRY NO: IITGOA/2018-19/110 DTD 14/02/2019**

1. Quotations are invited in two bid system for procurement of Electron Beam (e-beam) PVD System. Please mention the above-mentioned Title, Enquiry number and due date for submission of Bids on the sealed cover to avoid the bid being declared invalid.
2. The address and contact numbers for sending bids or seeking clarifications regarding this RFP are given below –

**Assistant Registrar  
(Stores & Purchase)  
IIT GOA, At GEC Campus,  
Farmagudi, Ponda – Goa.  
403401  
[ar\\_sp@iitgoa.ac.in](mailto:ar_sp@iitgoa.ac.in)**

3. This bid enquiry is divided into three parts as follows:
  - a. Part I – Contains General Information such as the time, place of submission and opening of tenders, Validity period of tenders, etc.
  - b. Part II – Contains Instructions for the Bidders and essential details of the items/services required, such as the Schedule of Requirements (SOR), Technical Specifications, Delivery Period, Place of Delivery and Consignee details.
  - c. Part III – Contains Price Bid format, other details etc.
4. This bid enquiry is being issued with no financial commitment and the Institute reserves the right to change or vary any part thereof at any stage and to with draw it at any stage.



**Part I – General information**

Tender No.	IITGOA/2018-19/110		
Tender Date	14.02.2019		
Tender Category	Goods		
Tender Type	Open		
No. of Envelopes	2		
Covers Information / Submission of Bids			
Cover No.	Cover Type	Description	Document Type
1	Technical	Technical Specification, Tender Document, EMD, Schedule of Requirement and Compliance, Bidders Information/Indian Agent Information, Previous Supply Order	.pdf
2	Financial	Financial Bid	.pdf
<p>Two Bid System:</p> <ul style="list-style-type: none"> <li>❖ The two-bid system will be followed for this tender. In this system bidder must submit their offer in separate sealed envelopes as – Technical Bid and Financial Bid.</li> <li>❖ Separate technical bid and financial bid envelopes should be clearly marked as "Envelope No. 1 - Technical Bid" and "Envelope No. 2 - Financial Bid".</li> <li>❖ Both these sealed covers are to be put in a bigger cover which should also be sealed and duly super scribed with our Tender No. &amp; Due Date and to be submitted to the concern department/section mentioned in tender document.</li> <li>❖ Bids should be forwarded by Bidders under their original memo / letter head inter alia furnishing details like GST number, Bank Details etc. and complete postal &amp; e-mail address of their office.</li> </ul> <p>Note:</p> <ul style="list-style-type: none"> <li>• The technical offer should not contain any price information. If the price quoted is submitted in technical bid the tender will be rejected at the sole discretion of IIT Goa.</li> <li>• Initially Technical Bids will be opened and evaluated by the purchase committee. Financial Bid of only Technically qualified bidders will be opened later.</li> <li>• Contract/ Purchase Order will be awarded to the lowest bidder(L1) of Financial Bid among them.</li> </ul>			
Form of Contract	Supply		
EMD Fee Details (in the form of Bank Guarantee/Demand Draft)			
EMD Fee INR:	1,93,000.00/-		

**General Conditions of EMD:**

- a) Bidders are required to submit Earnest Money Deposit (EMD) for an amount of Rs 1,93,000/- along with their bids. The EMD may be submitted in the form of an Account Payee Demand Draft/Bank Guarantee from any Public Sector Bank authorized to conduct government business favouring "Indian Institute of Technology Goa, payable at Goa". Bids not accompanied by EMD will be rejected.
- b) The EMD will be refunded to all the bidder other than the three lowest technically suitable bidder within one month from the date of opening of the Financial Bid (Cover – II). The EMD of the bidder other than the bidder whose offer is accepted will be refunded with in a period of one month after award of Contract.
- c) The EMD of the bidder who are not qualified under Cover – I will be refunded within one month from the date of return of their unopened cover – II.
- d) The EMD of the successful bidder will be refunded only after the remittance of security deposit.
- e) Where a person whose tender has been received intimates that they are withdrawing their tender before the validity period or makes any modification in the terms and conditions of the tender which are not acceptable to IIT Goa (or) fail to furnish the security deposit within the prescribed time, IIT Goa shall without prejudice to any other right or remedy, be at liberty to forfeit the Earnest Money deposited by such person absolutely. The Bid Security of the successful bidder would be returned, without any interest whatsoever, after the receipt of Performance Security from them as called for in the contract.
- f) Micro and Small Enterprises (MSEs) registered with National Small Industries Corporation are exempted from payment of Earnest Money Deposit. However, vendors covered under this category have to submit copy of registration certificate with present validity along with technical bid, failing which, the bid will be disqualified.

Bid Validity (Days):	120 days
Period of Work/Delivery Period (Days):	60 days
Pre-Bid Meeting Date & Time:	Will be decided on request
Pre-Bid Meeting Place & Address:	NA
Modification and Withdrawal of Bids:	A prospective bidder who requires clarification regarding the contents of the bidding documents shall notify to the Buyer in writing about the clarifications sought not later than 7 (Seven) days prior to the date of opening of the Bids. Copies of the query and clarification by the purchaser will be sent to all prospective bidders who have participated the bidding documents.
Clarification regarding contents of the tender document/RFP:	A bidder may modify or withdraw his bid after submission provided that the written notice of modification or withdrawal is received by the Buyer prior to deadline prescribed for submission of bids. A withdrawal notice may be sent by email but it should be followed by a signed confirmation copy to be sent by post and such signed confirmation should reach the purchaser not later than the deadline for submission of bids. No bid shall be modified after the deadline for submission of bids. No bid may be withdrawn in the interval between the deadline for submission of bids and expiration of the period of bid validity specified. Withdrawal of a bid during this period will result in Bidder's forfeiture of bid security.
Rejection of bids:	Canvassing by the Bidder in any form, unsolicited letter and post-tender correction may invoke summary rejection with forfeiture of EMD. Conditional tenders will be rejected.
Unwillingness to quote:	Bidders unwilling to quote should ensure that intimation to this effect reaches before the due date and time of opening of the Bid, failing which the defaulting Bidder may be delisted for the given range of items as mentioned in this RFP.
Contract Type:	Tender

Delivery Location:	Indian Institute of Technology Goa Goa Engineering College Campus,  Bhauasaheb Bandodkar Technical Education Complex, Veling, Farmagudi, Ponda, Goa
Pin Code:	403401
Bid Submission End Date/Date & Time Submission:	07.03.2019 at 17:00hrs
Place of Submission of Bid:	Stores & Purchase Department, IIT Goa, Admin Block, At GEC Campus, Farmagudi, Ponda, Goa-403401
Bid Opening Date & Time:	08.03.2019 at 15:00 hrs
Bid Opening Place:	IIT Goa, Admin Block, At GEC Campus, Farmagudi, Ponda, Goa-403401
Other Terms & Conditions:	As per mentioned in technical specification
Technical Clarification:	Name: Dr. Santosh Kumar Dept: IIT Goa  Email: skumar@iitgoa.ac.in
Tender Inviting Authority:	Name: Assistant Registrar (S&P) Address: Stores & Purchase Department,  IIT Goa, Admin Block, At GEC Campus, Farmagudi, Ponda, Goa - 403401
Signing Authority:	Assistant Registrar (S&P)



**Part II: Instructions to Bidders**

1. **Schedule of Requirements** – List of items are attached as **Annexure ‘A’**
2. **Technical Details:** Technical details are attached in **Annexure ‘B’**
3. **Two-Bid System:** In respect of Two-bid system, Bidders are required to furnish clause by clause compliance of specifications bringing out clearly the deviations from specification, if any.

i) **The Bidders are advised to submit the following documents along with Technical Bid –**

- a) Compliance certificate in the following format;

Para of tender enquiry specification item-wise (As per annexure B)	Specification of Item offered	Compliance – whether YES/NO	In case of non-compliance, deviation to be specified in unambiguous terms

- b) Bidders & Indian Agent’s Information (**Annexure C**).
- c) A copy of Indian Agent Agreement / Authorisation letter from OEM / OEMs along with tender to be submitted by All Indian Agents, if the manufacturer/supplier is based in abroad.
- d) EMD
- e) GST/PAN details
- f) The Bidder should provide a list of customers of previous supply of a similar/ same range of equipment to IIT’s/ NIT’s/Universities with contact details. Copies of order received need to be submitted.
- ii) **The following documents should be submitted along with Financial Bid –**
- a) Price Bid. (**Annexure D**)
  - b) Previous order of supplies/Justification of quoted rates. (**Annexure E**)

4. **Delivery Period** – supply to be made within **60 days** from the effective date of issuance of Purchase Order. Please note that P.O. can be cancelled unilaterally by the Institute in case items are not received within the delivery period. Extension of delivery period will be at the sole discretion of the Institute, with applicability of LD clause.

5. **Delivery and Transportation** - Place for supply / installation is **‘Indian Institute of Technology Goa, Ponda – Goa’**. The transportation cost up to the destination is to be borne by the bidder.

### Part III: Conditions of Contract

1. Award of Contract:
  - i. IIT Goa shall award the contract to the technically qualified eligible BIDDER whose bid has been determined as the lowest evaluated financial bid.
  - ii. If more than one BIDDER happens to quote the same lowest price, IIT Goa reserves the right to award the contract to more than one BIDDER or any BIDDER.
2. Prices:
  - i. **For Import Supplies:**
    - a) It is mandatory to quote price in **CIF/CIP Goa basis only** with separate cost breakup.
    - b) In case of Multiple options of same product, bidders are requested to quote only one best option and not multiple options.
    - c) All local taxes, customs duty and clearance charges will be borne by the Institute as applicable.
    - d) The supplier shall pay and bear all other liabilities, taxes and duties not specifically agreed by the Purchaser in the contract.
  - ii. **For Indigenous Supplies:**
    - a) In case of Multiple options of same product, bidders are requested to quote only one best option and not multiple options.
    - b) The supplier shall pay and bear all other liabilities, taxes and duties not specifically agreed by the Purchaser in the contract.
3. Pre-installation:
  - i. Please also mention the pre-installation requirements for the equipment like ambient temperature, humidity, civil work, weather specifications, power specifications, etc. When items are provided full performance satisfaction should be demonstrated.
4. Installation:
  - i. Supplier shall be responsible for installation / demonstration wherever applicable and for after sales service during the warranty period and thereafter as mentioned in the contract.
  - ii. Installation / demonstration to be arranged by the supplier free of cost and the same is to be done within 15 days of the arrival of the equipment at site.
5. Training:
  - i. The supplier shall submit training proposal for the operation and maintenance to the personnel of IIT Goa on the offered equipment/machinery.
  - ii. Wherever needed, our technical persons should be trained by the supplier at the project site free of cost. In case the person is to be trained at supplier's site abroad or in India it should be mentioned in the quotation clearly. The supplier should bear all the expenses for such training including 'to & fro' fares and lodging & boarding charges.
6. Terms of Payment:
  - i. 90% Payment on delivery or by Letter of credit and balance 10% will be paid after satisfactory installation and commissioning. IIT Goa do not pay any advance payment to supplier.
7. Legal Matter:
  - i. All disputes are subject to Goa jurisdiction only.
8. Penalty/ Liquidated Damages:
  - i. Timely delivery is essence of the contract and hence if any consignment be delayed, liquidated damages at the rate 0.5% of the price of the delayed consignment, for each week or part whereof shall be levied and recovered subject to maximum of 10% of total purchase order value.
  - ii. IIT Goa reserves the right to cancel the order in case the delay is more than 10 weeks. Penalties if any will be recovered by forfeiting PBG at vendor's cost and risks.

9. Supervision of Erection and Commissioning:

- i. Successful BIDDER shall depute concerned specialist, for supervision of erection & commissioning of the machine to be carried out. The successful BIDDER shall make necessary arrangement at their own expenses for stay, transport and other expenses of their Specialist during their stay in Goa which also includes imparting free of cost training to IIT Goa personnel.

10. Performance Guarantee (GFR 2017 Rule 171):

- i. Performance Guarantee Bond is mandatory.
- ii. Successful tenderer/ bidder should submit performance guarantee as prescribed above to be sent to The Assistant Registrar, Stores & Purchase Department, IIT Goa on or before 15 days from the due date of issue of order acknowledgement. The PBG to be furnished in the form of bank guarantee as per proforma or annexure of the tender documents, for an amount covering 5 % of the purchase order value.
- iii. The Performance Guarantee should be established in favour of "The Registrar, IIT Goa".
- iv. PBG to be established through any of the National Banks (whether situated at Goa or outstation) with a clause to enforced the same on their local branch of Goa or any scheduled bank (other than national bank) situated at Goa. Bonds issued by co-operative banks will not be accepted.
- v. Performance Guarantee Bond shall be for the due and faithfully performance of the contract and shall remain binding, notwithstanding such variations, alterations for extensions of time as may be made, given, conceded or agreed to between the successful tenderer and the purchaser under the terms & conditions of acceptance to the tender.
- vi. The successful tenderer is entirely responsible for due performance of the contract in letter and spirit and all other documents referred to in the acceptance of tenders.
- vii. The PBG shall be kept valid during the period of contract and shall continue to be enforceable for a period of one year/two years (as mentioned in the tender document) or upto warranty period whichever is later from the date of order acknowledge. In case PBG needs extensions upto warranty period then supplier shall initiate extensions to PBG one month prior to expiry of PBG.
- viii. For successful suppliers, if PBG is not submitted within 15 days from the date of Order Acknowledgement, then the Purchase Order will be cancelled with forfeiting of EMD.
- ix. **No interest shall be payable by the buyer to the Bidder on PBG.**

**List of items required**

<b>Sl. No.</b>	<b>Description of Items</b>	<b>Qty</b>
1	Electron Beam (e-beam) PVD System	01 No.



## Technical Specifications for Electron Beam (e-beam) PVD System

### 1. Purpose

- 1.1 Cross-contamination proof 4cc multi-pocket (minimum, 4 pockets) electron-beam evaporation system is required for deposition of high purity, high optical quality, and high electrical quality thin-films & multilayer (also of distributed Bragg reflector (DBR)) with controlled and constant deposition rate.
- 1.2 The system should be able to deposit thin-films of metals, dielectrics, and some non-volatile alloys of thickness 5 nm-3 $\mu$ m (depending on materials).
- 1.3 List of thin-film/evaporating materials, must be evaporated:
  - Au, Au-Ge, Al, Ag, Cr, Cd, Ni-Cr, Ni, Fe, Co, Cu, Si, Ti, Pd, Pt, W, Mo, Ir, Ru, SiO<sub>2</sub>, TiO<sub>2</sub>, HfO<sub>2</sub>, MgF<sub>2</sub>, Si<sub>3</sub>N<sub>4</sub>, Al<sub>2</sub>O<sub>3</sub>, Ta<sub>2</sub>O<sub>5</sub>, BaTiO<sub>3</sub>, ITO, commonly used rare earth oxides, etc.
- 1.4 Substrates for/ materials underneath of thin-film:
  - 100 mm diameter wafer of Si, GaAs, InP, GaN, Al<sub>2</sub>O<sub>3</sub>, Glass, Quartz, etc.
  - Compatible film of materials mentioned above in point 1.2
  - mono or a few layers flakes of 2D materials like graphene, transition metal dichalcogenides transferred on above substrates, and
  - flexible substrates like PolyEthylene Naphthalate (PEN), Polyimide, PET, etc.
- 1.5 The system includes deposition chamber, dry vacuum pumps, valves and gauges, electron gun, power supplies, substrate holder with heating & rotating mechanism, shutters, instrumentation and all necessary control units. The functional requirements, specifications and details of sub-systems are described in this document.
- 1.6 A thickness uniformity of  $\pm 5\%$  for 200 nm-thick Ti, for 250 nm-thick SiO<sub>2</sub>, and 200 nm-thick TiO<sub>2</sub> to be demonstrated on 100 mm diameter Si substrates.
- 1.7 A satisfactory optical-quality parameters (such as real and imaginary refractive indices) of thin films must be demonstrated. For example, real refractive index of  $1.450 \pm 0.003$  for SiO<sub>2</sub>, and  $2.4 \pm 0.1$  for TiO<sub>2</sub>.
- 1.8 The system and subsystem should be compatible to Class 1000 clean room
- 1.9 The system and subsystems should have on-site upgradability with:
  - two water cooled thermal sources
  - a load-lock chamber which could handle 100 mm diameter substrates. The transfer mechanism should be able to transfer one 100mm diameter or many smaller size substrates using a carrier. Or with
  - a load-lock chamber equipped with RF Etch Facility to clean the substrate/s before transferring to the main chamber for deposition.

### 2. Main System Frame

#### 2.1 Main or Process Chamber

- 2.1.1 Water cooled stainless steel 304 non-magnetic chamber with a front opened door
- 2.1.2 The dimensions of the chamber must match the future upgradability needs
- 2.1.3 An electrically-controlled shutter next to the substrate holder
- 2.1.4 A thickness measuring device, installed next to the substrate holder but below the shutter
- 2.1.5 Top and bottom view ports in such ways that substrate/shutter can be seen through the top view port and electron beam hearth can be seen through bottom view port.
- 2.1.6 At least 3Nos of spare view ports should be provided for future expansion. For example, the offered model could use one port to insert controlled amount of oxygen in the chamber through a pipe which opens next to the substrate holder which will help to deposit a good optical quality thin-film of oxide dielectrics
- 2.1.7 Chamber shall have easily removable stainless-steel liners for protection of the inner chamber wall against deposition. An additional set should be provided with the system.
- 2.1.8 The chamber leak tested for  $< 2 \times 10^{-9}$  Torr with std l/sec for Helium

2.1.9 Achievable base pressure of the process chamber fitted with a load-lock should be better than  $6 \times 10^{-8}$  mbar & Load- lock pressure of better than  $5 \times 10^{-6}$  mbar should be achieved in 30 minutes after initiating the automatic pumping routine.

## 2.2 Pumping System for Process Chamber

2.2.1 System should have a roughing dry scroll pump from market established manufacturers like Leybold / Varian/ Pfeiffer/ Edwards

- Minimum pumping speed:  $10 \text{ m}^3/\text{hour}$ ; ultimate pressure  $\sim 7.5 \times 10^{-3}$  mbar
- All the flanges, piping connection cable, filter & any accessories required, should be quoted

2.2.2 Turbo molecular pump with pumping speed **400 liter/sec** or better, make Leybold / Varian/ Pfeiffer/ Edwards Ultimate vacuum in the Process Chamber should be better than  $6 \times 10^{-8}$  mbar

2.2.3 Automated and interlocked pumping system

- Vendor should furnish the details of the vacuum pumps, their make, pump down time etc in the quotation.
- Pumping system should be fully automated and should be controlled via a control module.
- Interlocks for water, vacuum, gate valve open / shut, linear probe in locked position, HT EB PSU covers, EB magnet should have status displayed

2.2.4 Vacuum Gauges suitable for measuring low and High Vacuum: Wide Range gauge of INFICON / AGILENT / Granville-Phillips/ Edwards

## 2.3 Electron Beam Gun

- One Electron Beam Gun (Make Telemark / Temescal/ Ferrotec) having cross-contamination proof 8 pockets (x 4cc (preferred)) rotatable hearth
- programmable XY sweep control to pin point E-Beam source beam
- point patterns are programmable from the remote-control display.
- Low arcing kit for dielectric material evaporation,
- $270^\circ$  beam deflection.
- Manual Automated turret rotation to allow for multi-layer deposition should be offered as standard.
- Upgrade: Automated turret rotation to allow for automated multi-layer programming and integration to the thin film controller is necessary but should be offered as upgrade.

2.4 **EB powers supply** (Make Temescal / Telemark / Ferrotec) 3 kW output power adjustable 10 kV constant voltage stable beam position, better than  $\pm 1\%$  voltage / current regulation. Note that the specified power supply should be able to evaporate the materials mentioned above, else suggest another appropriate power supply. Safety interlocks for rear cover, water, vacuum and magnet. PSU should be operated via hand held control device that can be brought next to the deposition chamber and a simultaneous operation of the unit and viewing of the beam in the chamber should be possible. in order that beam can be viewed at setup

## 2.5 Substrate Shutter

One pneumatically-controlled substrate shutter should be offered. There should be a provision to control & activate the shutter manually which will override the automatic control.

## 2.6 Deposition Rate Controller

Quartz Crystal Deposition Controller make INFICON SQ310 based on a multi-microprocessor design, which enables rapid measurement updates with superior resolution, as well as modular architecture.

Thickness Display: 0.000 to 999.9 KA

Rate Display: 0.0 to 999 A/sec

Controller to interface seamlessly with HMI/PLC control system for manual/automated hand over

This should be quoted as separate item. In case, it cannot be procured now, on-site upgrade should be possible. Please quote both prices.

**2.7 Deposition Rate Monitor -**

Quartz Crystal Deposition Monitor should be offered as standard on the system

**2.8 Substrate Holder and Rotation**

Substrate Holder capable of holding various dimensions of substrate from 10 mm dia. to 100 mm dia. disc  
The system shall be delivered with 2 different substrate holders for different applications. Exact details to be agreed with the intender

Changing of substrate holders shall be performed by trained operator in less than 15 minutes

Rotation gear driven, speed control DC motor and rotary feedthrough with speed 3- 20 RPM. DC rotation stage to substrate platen, speed control and start/stop from HMI

**2.9 Substrate Heater**

A suitable 1000W Quartz Lamp Heater for substrate front side heating should be provided for varying substrate temperature from RT to a maximum of 500°C with a thermocouple and proportional temperature control (PID).

**2.10 System control and software**

2.10.1 PLC-PC interfaced for thin film deposition system (such as thickness controller, rotation controller, evaporation sources, pump down sequence, vent sequence, power control, shutter control, substrate heater and any required components) by HMI for complete automatic user-friendly operation with Window based software with necessary data base management.

2.10.2 The software must be user-friendly for all types of processing.

2.10.3 The necessary software in the CD form should also be provided for future use

2.10.4 Software configured such that all automated processes can be manually controlled.

**2.11 Cabinet & Operational Power supply and Safety**

2.11.1 The system should be fully mounted in an all metal cabinet / rack 19inch having removable side panels and rear panels for access and maintenance.

2.11.2 Power requirement such as voltage, Three Phase/single phase 60/50 Hz should be mentioned.

2.11.3 Earthing requirement if any should be mentioned.

2.11.4 All the electronic components should be commercially off-the-shelf type

2.11.5 Emergency Power Shutdown Switch on Front panel. Includes automated emergency shut of backing line valves and NC turbo vent valves for power out recovery situation.

**2.12 Safety features**

2.12.1 The equipment should be provided with the all safety devices and interlocks.

2.12.2 The System should be automated by means of the PLC/PC interlocked with all system sub-controller.

**2.13 Consumable & Spare Parts (to be offered as optional items)**

Necessary recommended consumable spares like O-rings, vacuum grease, fuses

Tungsten Filament for E-Beam Gun 10Nos

Gold Coated Quartz Crystal 6 MHz 10Nos

Tool Kit

Spare Part for E-Beam Gun

Crucible liners 4cc (Molybdenum, Tungsten, Alumina, Graphite and Vitreous Carbon over Graphite) 2Nos each

**2.14 Process Demonstration**

The system should be tested at IIT Goa as per the acceptance test procedure, the evacuation sequence, three deposition cycles should be demonstrated on customer's sample. Substrates and evaporation material for demonstration is to be provided by the customer.

2.15 Utilities / pre-installation requirement should be provided with the offer.

**2.16 Pre-Dispatch Inspection**

Pre-dispatch inspection at vendor site should be provided. Client IIT Goa two persons should visit the vendor's site for Factory Acceptance Test (FAT) at manufacturer site and may request to produce test samples / test results to ensure performance checks for its acceptance.

**2.17 Installation, re-installation and commissioning:**

The supplier should do installation and commissioning of the equipment at IIT Goa in its temporary campus. However, the supplier must have to agree to re-install the system at its permanent campus. The extra charges for re-installation will not be provided. The infrastructure/ utilities required from IIT Goa during installation and commissioning should be mentioned with the offer.

**2.18 Warranty**

One-year warranty should be provided from the date of successful installation and commissioning at customer's site

Software up-gradation, if any, should be incorporated free of cost during the warranty period.

**2.19 Documentation:**

Vendor should provide complete set of Operation, service & maintenance manual, Technical manuals with full diagrams and drawings in duplicate

**2.20 OPTIONAL (The following items should be quoted separately)**

2.20.1 Additional gas lines with MFC and fittings

2.20.2 One set of gauges should be quoted

2.20.3 Recirculating Chiller

2.20.4 Additional liner set

2.20.5 Crucible liners 4cc (Molybdenum, Tungsten, Alumina, Graphite and Vitreous Carbon over Graphite, other recommended crucibles to cover all evaporating materials mentioned above) **2Nos each**

2.20.6 Extended Warranty

Extended warranty for a period of two years after the completion of standard warranty period (one year) should be quoted.

2.20.7 AMC should be offered per year basis

2.20.8 Comprehensive maintenance contract (CMC) should be provided for each year upto five years

**2.21 Notes**

The system must be complete in all respects and the manufacturer must ensure complete integration of all sub system with cables, connectors as required and take the responsibility for service.

List of at least ten (10) customers references of International Repute with their correspondence addresses (with email ID & phone and fax Nos.) should be provided by the vendor, where similar systems have been installed.

Compliance statement of each points of the technical Specifications & Commercial Terms & Conditions should be provided.

Only reputed original equipment manufacturer (OEM) of international standard should submit the tender. The system being supplied should meet Semi Standards or European quality standard or certify by American Vacuum society or ISO Certified for design, fabrication, installation and testing.

The system fabrication assembly and testing at vendor site should be in Class 10000 or better

Vendor may be asked for technical presentation on their offered system

The vendor should undertake to service and supply the necessary spares for the electron beam evaporation system for a period of ten years.

Vendor will specify the time frame to attend the trouble shooting in case of any service issue

Vendor must have the local service support in India

Detailed operation and service manual (soft and hard copies) along-with software keys should be supplied.

Vendor should supply the Original Warranty Certificates along with part numbers for all the major bought out components like e-beam gun, e-beam power supply & associated hardware, all the vacuum pumps, gauges & FTM & Controllers.

**(To be printed on letterhead of the bidder)**

**Annexure C**

**Bidders Information**

1.	Name of the Bidder	
2.	Address of the Bidder	
3.	PAN No.	
4.	GSTN No.	
5.	State of GST Registration	
6.	E-mail	
7.	Contact Person's Name & Designation	
8.	Mobile No.	

**Indian Agent's Information**

1.	Name of Indian Agent	
2.	Address of Indian Agent	
3.	Indian Agent PAN No.	
4.	Indian Agent GSTN No.	
5.	State of GST Registration	
6.	E-mail	
7.	Contact Person's Name & Designation	
8.	Mobile No.	

**(To be printed on letterhead of the bidder)**

**Annexure D**

**PRICE BID FORMAT**  
(For Imported Supplies)

S.No.	Item description & short specification	HSN Code/ SAC Code	Qty in Units	GST %	Price Basis	Total Bid Price
1.	<b>Electron Beam (e-beam) PVD System</b> (As per technical specification)					
2.	<b>Installation and Commissioning Charges</b> (if any, quote in INR)					
3.	<b>Agency Commission</b> (if any, quote in %)					
4.	Other Charges (if any, please specify)					
Grand Total						

#HSN Code: "Harmonized System of Nomenclature Code No." and SAC Code: "Service Accounting Codes Code No."

1. Delivery Period: ..... days

2. Terms of Payment

(a) 90% payment by Letter of Credit and balance 10% will be paid by wire transfer after satisfactory installation and commissioning.

3. Validity of the bid: 120 days from the date of submission of quotation/tender.

4. Mode of Shipment: .....

5. Port of Shipment: .....

Signature.....

Name .....

Place:

Company Name & Address: .....

Date:

Affix Rubber Stamp: .....

**Note: Price Bid should be submitted in given format only. For additional information/extra items above format may be typed and used.**

**PRICE BID FORMAT**

(for Indigenous Supplies, Quotes in INR only)

S.No.	Item description & short specification	HSN Code/ SAC Code	Qty in Units	GST %	Price Basis	Total Bid Price
1.	<b>Electron Beam (e-beam) PVD System</b> (As per technical specification)					
2.	<b>Installation and Commissioning Charges</b> (if any, quote in INR)					
3.	<b>Agency Commission</b> (if any, quote in %)					
4.	Other Charges (if any, please specify)					
Grand Total						

#HSN Code: "Harmonized System of Nomenclature Code No." and SAC Code: "Service Accounting Codes Code No."

1. Delivery Mode: Delivery at IIT Goa, at site only.

2. Terms of payment: 100% payment within 30 days after the delivery and successful installation at IIT Goa.

3. Validity of the bid: 120 days from the date of submission of quotation/tender.

Signature.....

Name .....

Place:

Company Name & Address: .....

Date:

Affix Rubber Stamp: .....

**Note: Price Bid should be submitted in given format only. For additional information/extra items above format may be typed and used.**



**Reasonability of Prices**

Please quote best minimum prices applicable for a premier Educational and Research Institution. The party must give details of at least two purchase orders identical or similar equipment, supplied to any IITS/Research Institutions/ other organisation as per below Format (to be enclosed in Technical Bid) along with the final price paid and details are mandatory.

**Previous Supply Orders**

**Name of the Firm** \_\_\_\_\_

S.No.	PO No. & Date	Description & Quantity of ordered equipment	Value of Order	Date of completion of delivery as per contract	Remarks indicating reasons for late delivery, if any and justification of price difference of their supply order & those quoted to us	Has the equipment being installed satisfactorily (attach a certificate from the Purchaser/ Consigner)	Contact Person along with Telephone no., Fax No. and e-mail address

Place: \_\_\_\_\_

Date: \_\_\_\_\_

Signature and Seal of the Manufacturer / Bidder

## FORMAT FOR PERFORMANCE GUARANTEE BOND

(To be typed on Non-judicial stamp paper of the value of Indian Rupees of One Hundred) (TO BE ESTABLISHED THROUGH ANY OF THE NATIONAL BANKS (WHETHER SITUATED AT GOA OR OUTSTATION) WITH A CLAUSE TO ENFORCE THE SAME ON THEIR LOCAL BRANCH AT GOA OR ANY SCHEDULED BANK SITUATED AT GOA. BONDS ISSUED BY CO-OPERATIVE BANKS ARE NOT ACCEPTED.

To,  
The Registrar,  
Indian Institute of Technology, Goa  
Farmagudi, Ponda,  
Goa – 403401

### **LETTER OF GUARANTEE**

WHEREAS Indian Institute of Technology, Goa (Buyer) have invited Tenders vide Tender No..... Dt. .... for purchase of .....  
AND

WHEREAS the said tender document requires that any eligible successful tenderer (seller) wishing to supply the equipment / machinery, etc. in response thereto shall establish an irrevocable Performance Guarantee Bond in favour of “**Registrar, Indian Institute of Technology, Goa**” in the form of Bank Guarantee for Rs ..... (**5% (five percent) of the purchase value**) and valid till **one year or upto warranty period whichever is later** from the date of issue of Performance Guarantee Bond may be submitted within 15 (Fifteen) days from the date of Order Acknowledgment as a successful bidder.

NOW THIS BANK HEREBY GUARANTEES that in the event of the said tenderer (seller) failing to abide by any of the conditions referred in tender document / purchase order / performance of the equipment / machinery, etc. this Bank shall pay to Indian Institute of Technology, Goa on demand and without protest or demur Rs..... (Rupees.....).

This Bank further agrees that the decision of Indian Institute of Technology, Goa (Buyer) as to whether the said Tenderer (Seller) has committed a breach of any of the conditions referred in tender document / purchase order shall be final and binding.

We, ..... (name of the Bank & branch) hereby further agree that the Guarantee herein contained shall not be affected by any change in the constitution of the Tenderer (Seller) and/ or Indian Institute of Technology, Goa (Buyer).

#### **Notwithstanding anything contained herein:**

1. Our liability under this Bank Guarantee shall not exceed Rs. .... (Indian Rupees ..... only).
2. This Bank Guarantee shall be valid up to .....(date) and
3. We are liable to pay the guaranteed amount or any part thereof under this bank guarantee only and only if IIT Goa serve upon us a written claim or demand on or before ..... (date).
4. This Bank further agrees that the claims if any, against this Bank Guarantee shall be enforceable at our branch office at ..... situated at ..... (Address of local branch).

Date:

Yours truly,  
Signature and seal of the Guarantor:

Name of Bank:

**Instruction to Bank:** Bank should note that on expiry of Bond Period, the Original Bond will not be returned to the Bank. Bank is requested to take appropriate necessary action on or after expiry of bond period.