Domestic Tender

This is a Request for Quote (RFQ) for the supply and installation of a hybrid thin film system from the Indian Institute of Science (IISc), Bangalore.

1	Section 1	Bid Schedule	
2	Section 2	Eligibility Criteria	As specified by IISc
3	Section 3	Terms and Conditions	As specified by IISc
4	Section 4	Specifications	Technical specifications
5	Section 5	Technical Bid	Annexure 1: Bidder details
			Annexure 2: Declaration regarding experience of bidder
			Annexure 3: Declaration regarding clean track record of the bidder
			Annexure 4: Declaration of acceptance of tender
			Annexure 5: Terms and conditions. Details of item quoted
6	Section 6	Commercial bid	Quotation with Price, Technical specifications of the equipment

Section 1 - Bid Schedule

1	Tender No	PPH/VBSI/600/25-26
2	Tender Date	30.07.2025
3	Item Description	A hybrid thin film system
4	Tender Type	Two bid system (i) Technical Bid (Part A) (ii) Commercial Bid (Part B)
5	Place of tender submission	Chairperson, Department Of Physics Indian Institute of Science, Bangalore 560012 Attention: Dr. Vibhor Singh
6	Last Date & Time for submission of tender	5.30 pm, 21.08.2025
7	For further clarification	Dr. Vibhor Singh Department of Physics, Indian Institute of Science, vsingh@iisc.ac.in Ph: 080 2293 2481

Section 2 – Eligibility Criteria

Prequalification criteria:

1. The Bidder's firm should have existence for a minimum of 5 years. (Enclose Company
   Registration Certificate)

2. The Bidder should belong to either class 1 or class 2 supplier distinguished by their "local content" as defined by recent edits to GFR. They should mention clearly which class they belong to in the cover letter.

    a) **Class 1 supplier:** Goods and services should have local content of equal to or more than 50%.
    b) **Class 2 supplier:** Goods and services should have local content of equal to or more than 20% and less than 50%.

3. Purchase preference as defined by the recent edits to GFR (within the "margin of purchase preference") will be given to Class-1 supplier.

4. Quote should come only from Indian Original Equipment Manufacturer (OEM) or their Indian authorized distributor.

5. The quotations should be on FOR-IISc Bangalore basis in INR only.

6. MSME can seek exemption to some qualification criteria. IISc follows GFR2017 for such details

7. The bidder should sign and submit the declaration for Acceptance of Terms and Conditions as per -Annexure 4.

8. The Bidder must not be blacklisted/banned/suspended or have a record of any service- related dispute with any organization in India or elsewhere. A declaration to this effect must be given as per Annexure 3.

9. Bidders offering imported products will fall under the category of non-local suppliers. They cannot claim themselves as class-1 local suppliers/ class-2 local suppliers by claiming services such as transportation, insurance, installation, commissioning, training and other sales service support like AMC/CMC, etc., as local value addition.

Section 3 – Terms and Conditions

A) Submission of Tender:

1. All documentations in the tender should be in English.

2. Tender should be submitted in two envelops (two bid system).
   a. Technical Bid (Part-A) – Technical bid consisting of all technical details and check list for conformance to technical specifications.

      The technical proposal should contain a technical compliance table with 5 columns.
      i. The first column must list the technical requirements, in the order that they are given in the technical requirement below.
      ii. The second column should provide specifications of the instrument against the requirement. Please provide quantitative responses wherever possible.
      iii. The third column should describe your compliance with a "Yes" or "No" only. Ensure that the entries in column 2 and column 3 are consistent.
      iv. The fourth column should state the reasons/explanations/context for deviations, if any.
      v. The fifth column can contain additional remarks from the OEM. You can use this opportunity to highlight technical features, qualify response of previous columns, or provide additional details, compare your solution with that of your competitors or provide details as requested in the technical requirements table below.

   b. Commercial Bid (Part-B) – Indicating item wise price for the items mentioned in the technical bid, **as per the format of quotation provided in tender**, and other commercial terms and conditions.

3. The technical bid and price bid should each be placed in separate sealed covers, superscripting on both the envelopes the tender no. and the due date. Both these sealed covers are to be placed in a bigger cover which should also be sealed and duly superscripted with the Tender No, Tender Description & Due Date.

4. The SEALED COVER superscripting tender number / due date & should reach Chairperson Office, Physics, Indian Institute of Science, Bangalore – 560012, India on or before due date mentioned in the tender notice. In case the due date happens to be holiday the tender will be accepted and opened on the next working day. If the quotation cover is not sealed, it will be rejected.

5. All queries are to be addressed to the person identified in "Section 1 – Bid Schedule" of the tender notice.

6. GST/other taxes, levies etc., are to be indicated separately. The BIDDER should mention GST Registration and PAN in the tender document (Indian Bidders only).

7. If price is not quoted in Commercial Bid as per the format provided in tender document the bid is liable to be rejected.

8. The Institute reserves the right to accept or reject any bid and to annul the bidding process and reject all bids at any time prior to the award of contract, without thereby incurring any liability to the affected bidder or bidders or any obligation to inform the affected bidder or bidders.

9. Incomplete bids will be summarily rejected.

B) Cancellation of Tender:

Notwithstanding anything specified in this tender document, the purchase committee, IISc Bangalore, in its sole discretion, unconditionally and without having to assign any reason, reserves the rights:

a. To accept OR reject lowest tender or any other tender or all the tenders.
b. To accept any tender in full or in part.
c. To reject the tender, offer not confirming to the tender terms.

C) Validity of the Offer:

The offer shall be valid 90 Days from the date of opening of the commercial bid.

D) Evaluation of Offer:

1. The technical bid (Part A) will be opened first and evaluated.

2. Bidders meeting the required eligibility criteria as stated in Section 2 of this document shall only be considered for Commercial Bid (Part B) opening. Further, agencies not furnishing the documentary evidence as required will not be considered.

3. Pre- qualification of the bidders shall not imply final acceptance of the Commercial Bid. The agency may be rejected at any point during technical evaluation or during commercial evaluation. The decision in regard to acceptance and / or rejection of any offer in part or full shall be the sole discretion of IISc Bangalore, and decision in this regard shall be binding on the bidders.

4. The award of contract will be subject to acceptance of the terms and conditions stated in this tender.

5. Any offer which deviates from the vital conditions (as illustrated below) of the tender is liable to be rejected:

a. Non-submission of complete offers.

b. Receipt of bids after due date and time and or by email / fax (unless specified otherwise).

c. Receipt of bids in open conditions.

6. In case any BIDDER is silent on any clauses mentioned in these tender documents, IISc Bangalore shall construe that the BIDDER had accepted the clauses as of the tender and no further claim will be entertained.

7. No revision in the terms and conditions quoted in the offer will be entertained after the last date and time fixed for receipt of tenders.

8. Lowest bid will be calculated based on the total price of all items tendered for Basic equipment along with accessories selected for installation, operation, preprocessing and post processing, optional items, recommended spares, warranty, annual maintenance contract. Also see section G.

E) Pre-requisites:

The bidder will provide the prerequisite installation requirement of the equipment along with the technical bid.

F) Warranty:

The complete system is to be under warranty period of minimum 1year including free supply of consumables, spare parts and data analysis software from the date of functional installation. If the instrument is found to be defective, it must be replaced or rectified at the cost of the bidder within 30 days from the date of receipt of written communications from IISc, Bangalore. If there is any delay in replacement or rectification, the warranty period should be correspondingly extended.

G) Annual Maintenance Contract:

An annual maintenance contract for a period of at least 2 years post warranty should be provided on completion of warranty period. If the equipment cost is A, AMC is B, the lowest bid will be calculated as L1=A+5*B.

H) Purchase Order:

1. The order will be placed on the bidder whose bid is accepted by IISc based on the terms & conditions mentioned in the tender document.

2. The quantity of the items in tender is only indicative. IISc, Bangalore reserves the right to increase /decrease the quantity of the items depending on the requirement.

3. If the quality of the product and service provided is not found satisfactory, IISc, Bangalore reserves the right to cancel or amend the contract.

I) Delivery, Installation and Training:

The bidder shall provide the lead time to delivery, installation and made functional at IISc, Bangalore from the date of receipt of purchase order. The system should be delivered, installed and made functional within **9 months** from the date of receipt of purchase order. The supply of the items will be considered as effected only on satisfactory installation and inspection of the system and inspection of all the items and features/capabilities tested by the IISc, Bangalore. After successful installation and inspection, the date of taking over of entire system by the IISc, Bangalore shall be taken as the start of the warranty period. No partial shipment is allowed.
The bidder should also arrange for technical training to the local facility technologists and users.

J) Payment Terms:

The payments to non-domestic vendors will be through a Letter of Credit and milestone of the payment will be determined after the mutual discussions with the successful bidder. As per GFR no advance payment can be made to domestic vendors, unless an equal amount of bank guarantee is provided.

K) Statutory Variation:

Any statutory increase in the taxes and duties subsequent to bidder's offer, if it takes place within the original contractual delivery date, will be borne by IISc, Bangalore subject to the claim being supported by documentary evidence. However, if any decrease takes place the advantage will have to be passed on to IISc, Bangalore.

L) 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 the city of Bangalore, India.

M) General:

1. All amendments, time extension, clarifications etc., within the period of submission of the tender will be communicated electronically. No extension in the bid due date/time shall be considered on account of delay in receipt of any document(s) by mail.

2. The bidder may furnish any additional information, which is necessary to establish capabilities to successfully complete the envisaged work. It is however, advised not to furnish superfluous information.

3. The bidder may visit the installation site before submission of tender, with prior intimation.

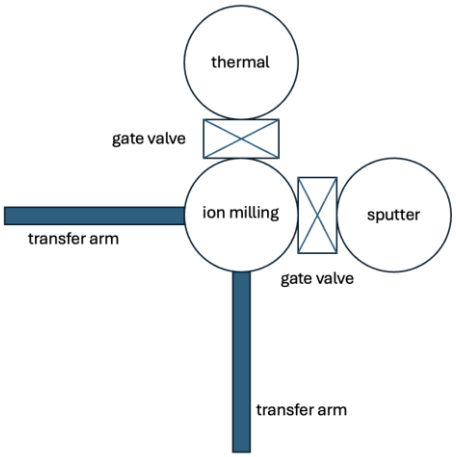
4. All imported equipment should be quoted in the currency of the country of origin, and all locally sourced items should be quoted in Indian Rupees.

5. Any information furnished by the bidder found to be incorrect, either immediately or at a later date, would render the bidder liable to be debarred from tendering/taking up of work in IISc, Bangalore.

Section 4 – Technical specifications:

The hybrid system consists of three chambers. A UHV sputter chamber, a thermal evaporation chamber, and a load chamber with an integrated ion-milling source. The system should have two transfer arms to move the sample-stage from load chamber to sputter-chamber, and from load chamber to thermal evaporation chamber. A possible configuration schematic's top view is shown below. The technical specifications of the complete system are given in the sections below.

The compliance sheet in technical bid must address all the points listed under section A to E.



A. Sputter subsystem

1.	**Application:** The primary applications for the DC/RF Magnetron sputtering system is for thin film deposition of metals such Nb on up to one 2" substrate.
2.	**Chamber:** Preferably SS304. This will be a custom designed chamber which may be spherical or cylindrical. The system can be designed for confocal. It must have sufficient viewports for the smooth operation of the system.
3.	**Chamber base pressure:** of 5x10-8 Torr to be achieved in clean cold chamber.
4.	**Chamber Pumping:** It is preferred that the above pumping be achieved with a combination of a turbo molecular pump 650 l/s (preferably Pfeiffer) and a DRY backing/roughing pump 12m3/hr (preferably Pfeiffer).
5.	**Baking tapes:** for main chamber, along with power supply, thermocouple and display to read temperature.
6.	**Magnetron Sources:** Two numbers of DC magnetron sources for 2" dia. target. Technical bid must include the details of the magnetron source. The sources should be from standard manufacturer such as AJA Int., Angstrom Eng., and Kurt J Leskar. Water cooled. Any rubber O-ring or Wilson-type seals are NOT allowed in the source design. Process-gas flow through the sources.
7.	**Shutters:** Two numbers of manual source shutters with UHV compatible rotary shaft seal (magnetically coupled).
8.	**Pressure gauges:** A combination of pressure sensors (Penning, and Pirani) for base and process pressure monitoring. A suitable gate control valve (manual) for the pumping control during the process.

9.	**Process Gas flow:** A gas flow line with two independent mass flow controllers (typically 0-100 sccm MFC) for Ar gases for each source. A suitable valving (Swagelok or equivalent) on the sources should be provided.
10.	**Chamber Vent:** A vent port with Swagelok or equivalent valve for venting with dry N2 gas should be provided.
11.	**Substrate Holder:** The sputtering system is being procured for deposition on up to 2" wafer and small pieces. The holder and the transfer arm must be design with this consideration. For small pieces, suitable clips should be provided to hold samples onto the holder).
12.	**Substrate Rotation:** Substrate rotation of about 15 RPM.
13.	**Liners:** The system should have provision to prevent debris to go into the vacuum valve, pumps, and electrodes.
14.	**DC Power Supply:** One number of DC power supply of 600 W for magnetron sputtering which can be operated in voltage/current and power mode and can be automated. A source selector switch must be provided. Technical bid should include the details of the source specification and manufacturer if not from the vendor's company.

B. Thermal evaporation sub-system

1.	**Chamber:** Preferably SS304 vacuum chamber with appropriate front opening door with clear and complete view of the substrate, sources and components. Suitable arrangement for protection of view port glass from deposition. The chamber base plate is provided with necessary feed through/ ports for evaporation sources, and other accessories, etc. All the components and materials used inside the chamber compatible for high vacuum. All rotary feedthroughs are UHV compatible (magnetic coupled or bellow sealed). Ports for high vacuum pumping system, vacuum measuring gauges.
2.	**Chamber base pressure:** Ultimate vacuum of 1 × 10-7 torr to be achieved in clean cold chamber.
3.	**Vacuum pumping system:** Dual stage dry rotary vane pump: With pumping speed of at least 12 m3/hr is provided for roughing and backing operation. (Preferably Pfeiffer Vacuum). Turbo molecular pump: Suitable air cooled TMP (at least 650 l/s) with Turbo controller, connecting cables, etc. (Preferably Pfeiffer Vacuum)
4.	**Evaporation Sources:** Two (02) sets of LT evaporation source consisting of electrical feed through for evaporation source holders, with 200 amps current carrying capacity and can be used with filaments/ baskets/ boats as evaporation sources. Operation in manual mode.
5.	**Evaporation power supply:** The power supply compatible and capable of delivering current up to 200 Amps for evaporation sources, with suitable current cables and cooling arrangement of electrodes. Qty 1 with a manual source selector switch.
6.	**Source to substrate nominal distance**: 40 cm.
7.	**Liners:** 1 set of removable stainless steel chamber liners provided for ease of cleaning of the deposition chamber.

8.	**Source Shutters:** Two numbers of manual source shutters with UHV compatible rotary shaft seal.
9.	**Substrate holder:** Substrate holder (SS304) suitable for 2-inch diameter wafer and irregular shaped pieces. Compatible clamps are provided for holding the samples. A suitable flat substrate holder is provided with controllable continuous rotation (0-15 rpm). Room temperature operation.
10.	**Quartz film thickness monitor and display:** Control of the evaporation current to maintain precise deposition rate and thickness. The system is provided with water cooled crystal holder and electronics to measure the rate of deposition and thickness with a computer interface.
11.	**High vacuum valve:** A suitable manually operated gate valve between TMP and vacuum chamber.
12.	**Roughing and backing valves:** Manual valves for roughing and backing operations. With connecting hardware.
13.	**Vent valve:** A Swagelok or equivalent valve connected to the user supplied dry nitrogen line.

C. Ion-milling sub-system:

1.	**Chamber:** Preferably SS304 vacuum chamber with appropriate opening door for loading and unloading of substrate holder. It must have a complete view of the substrate and a clear view during ion-milling process.
2.	**Chamber Pumping:** A combination of a turbo molecular pump 350l/s or higher (preferably Pfeiffer) and a DRY backing/roughing pump (preferably Pfeiffer 12m3/hr or higher).
3.	**Ion milling source:** A Kaufman source KDC40. Mo divergent beam grids. Uniformity on 3''. Ion energy: 100 - 1000 eV. Beam current up to 100 mA. Include one unit of MFC (up to 20 sccm Ar) with suitable Swagelok or equivalent valve to regulate Argon flow. The built-in gas line connection on KDC must be used for ion-milling process.
4.	**Controller:** Include the KSC1202 ion beam controller.
5.	**Pressure gauges:** A combination of pressure sensors for base and process pressure monitoring. A suitable gate control valve (manual) for the pumping control during the process.
6.	**Vent valve:** A Swagelok or equivalent valve connected to the user supplied dry nitrogen line.

D. Common specifications of the entire system:

1.	**System safety control:** A list of all safety interlocks available on the system and the cause/effect diagram that summarizes these safety features should be part of the technical bid. Some of the Safety and Interlocks: i. Electrical overload protection. ii. Mains Indication lamp. iii. Emergency ON/OFF Switch. iv. All major electrical circuit is provided with fuse.

	v. All major components will be connected through circuit breaker and contactor vi. Vacuum switch interlocked with cathode power supply for avoiding switching-ON of power sources without vacuum. vii. If the turbo molecular pump is water cooled system then, water flow switch in the water circulation line of the unit protects the turbo molecular pump in case of water supply failure/low pressure by switching off the turbo molecular pump.
2.	**Power supply:** The system to operate on 220V AC single phase 50 Hz with power neutral and ground connections
3.	**Water Chiller:** Include a suitable water chiller as an optional item.
4.	**Water manifold:** SS-304 make manifold for chilled water lines with single inlet and outlet to connect to the chiller with suitable tubing. The manifold shall distribute chilled water to different sub-systems of the deposition system.
5.	**Computer/Laptop:** for logging critical system parameters such as readings from pressure gauges, thickness monitor control, TMP parameters.
6.	**Transfer arms:** must be bellow sealed and magnetically coupled. Wilson-seal in not allowed. A representative configuration is displayed in the figure. Vendors may propose alternative configurations without compromising the technical performance of the system.
7.	**CF flange gaskets:** All the CF flanges must be sealed with OFHC copper gaskets.
8.	**Support structure:** with wheels for easy mobility and jack bolts with vibration arresting pads to keep the system in stationary position during operation
9.	**Leak testing:** All the components, sub-assemblies and final unit will be leak tested using Helium Mass Spectrometer better than 1 × 10-10 mbar-lit/ sec at the time of installation for system acceptance.
10.	**Gas lines:** Vendor must provide 3 meter long SS flexible gas lines (for each gas) with 1/4" Swagelok or equivalent fitting to connect to the customer supplied gas lines.
11.	**Spares:** Vendor should provide the spare set of the O rings and gaskets used in vacuum chamber.
12.	**Warranty:** Comprehensive warranty and support for at least 1 years. Include option for extended warranty for two additional years.
13.	**Original documents:** Vendor must provide an original warranty certificate and original invoices and AWBs with the system from OEM for all imported items. Vendors must submit a copy of the air waybill for all imported items.

E. General terms and conditions:

1.	**Prior experience:** Vendor must have prior experience in manufacturing similar system and must submit list of at least 5 customers with contact information, and details of the supplied system.
2.	**Drawings:** must be submitted for approval after the purchase order release and before the start of system manufacturing.
3.	**Deposition uniformity:** of 5% must be demonstrated using an in-house ellipsometry monitor at the time of acceptance of the system.

A. Training and demonstration

Training on usage of the machine (hardware and software) must be demonstrated by the successful bidder at bidder’s cost to the end users at IISc, Bangalore.

Section 5 - Technical Bid

The technical bid should furnish all requirements of the tender along with all annexures in this section and be submitted to

The Chairperson,
Attn: Dr. Vibhor Singh
Department of Physics
Indian Institute of Science
Bangalore – 560012, India

Annexure-1:

Details of the Bidder
The bidder must provide the following mandatory information & attach supporting documents wherever mentioned:

Details of the Bidder

Sl. No	Items	Details
1.	Name of the Bidder	
2.	Nature of Bidder (Attach attested copy of Certificate of Incorporation/ Partnership Deed)	
3.	Registration No/ Trade License, (attach attested copy)	
4.	Registered Office Address	
5.	Address for communication	
6.	Contact person- Name and Designation	
7.	Telephone No	
8.	Email ID	
9.	Website	
10.	PAN No. (attach copy)	
11.	GST No. (attach copy)	

Signature of the Bidder

Name
Designation, Seal Date:

Annexure-2:

Declaration regarding experience

To,
The Chairperson,
Department of Physics,
Indian Institute of Science,
Bangalore – 560012, India

Ref: Tender No: XXXXXXXXX
Dated: XXXXX

Supply of low noise amplifiers and cryogenic isolators to Department of Physics, IISc Bangalore.

Sir,

I've carefully gone through the Terms & Conditions contained in the above-mentioned tender. I hereby declare that my company / firm has years of experience in supplying the low noise amplifiers and cryogenic isolators.

(Signature of the Bidder)
Printed Name
Designation, Seal Date:

Annexure-3:

Declaration regarding track record

To,
The Chairperson,
Department of Physics,
Indian Institute of Science,
Bangalore – 560012, India

Ref: Tender No:

Dated: XXXXX

Supply of low noise amplifiers and cryogenic isolators to Department of Physics, IISc Bangalore.

Sir,
I've carefully gone through the Terms & Conditions contained in the above-mentioned tender. I hereby declare that my company/ firm is not currently debarred / blacklisted by any Government / Semi Government organizations / institutions in India or abroad. I further certify that I'm a competent officer in my company / firm to make this declaration.

Or

I declare the following

Sl.No	Country in which the company is Debarred /blacklisted / case is Pending	Blacklisted / debarred by Government / Semi Government/Organizations /Institutions	Reason	Since when and for how long

(NOTE: In case the company / firm was blacklisted previously, please provide the details regarding period for which the company / firm was blacklisted and the reason/s for the same).

Yours faithfully
(Signature of the Bidder)

Name
Designation, Seal

Date:

Annexure – 4:

Declaration for acceptance of terms and conditions

To,
The Chairperson,
Department of Physics,
Indian Institute of Science,
Bangalore – 560012, India

Ref: Tender No: XXXXXX
Dated: XXXX

Supply of low noise amplifiers and cryogenic isolators to Department of Physics, IISc Bangalore.

Sir,

I've carefully gone through the Terms & Conditions as mentioned in the above referred tender document. I declare that all the provisions of this tender document are acceptable to my company. I further certify that I'm an authorized signatory of my company and am, therefore, competent to make this declaration.

Yours faithfully,

(Signature of the Bidder)
Name
Designation, Seal Date:

Annexure – 5:

Details of items quoted:

a. Company Name
b. Product Name
c. Part / Catalogue number
d. Product description / main features
e. Detailed technical specifications
f. Remarks

Instructions to bidders:

1. Bidder should provide technical specifications of the quoted product/s in detail.
2. Bidder should attach product brochures along with technical bid.
3. Bidders should clearly indicate compliance or non-compliance of the technical specifications provided in the tender document.

Section 6 – Commercial Bid

The commercial bid should be furnished with all requirements of the tender with supporting documents as mentioned under:

S.No	Description	Cat. Number	Quantity	Unit Price	Sub total
1.	Essential items noted in the technical specification				
1.a	… (details of essential items)				
1.b	…				
2.	Optional items noted in the technical specification				
2.a	… (details of essential items)				
2.b	…				
3.	Accessories for operation and installation				
4.	All Consumables, spares and software to be supplied locally				
5.	Warranty (3 years)				
6.	AMC 2 years beyond warranty				

Any additional items

S.No	Description	Cat. Number	Quantity	Unit Price	Sub total

Addressed to

The Chairperson,
Attn: Dr. Vibhor Singh
Department of Physics,
Indian Institute of Science
Bangalore – 560012, India

Section 7 – Checklist

(This should be enclosed with technical bid- Part A)
The following items must be checked before the Bid is submitted:

1. Sealed Envelope "A": Technical Bid

1. **Section 5- Technical Bid (each page signed by the authorized signatory and sealed) with the below annexures:**
    a. **Annexure 1: Bidders details**
    b. **Annexure 2: Declaration regarding experience**
    c. **Annexure 3: Declaration regarding clean track record**
    d. **Annexure 4: Declaration for acceptance of terms and conditions**
    e. **Annexure 5: Details of items quoted**
2. **Copy of this tender document duly signed by the authorized signatory on every page and sealed.**

2. Sealed Envelope "B": Commercial Bid

Section 6: Commercial Bid

Your quotation must be submitted in two envelopes: Technical Bid (Envelope A) and Commercial Bid (Envelope B) super scribing on both the envelopes with Tender No. and due date and both of these in sealed covers and put in a bigger cover which should also be sealed and duly super scribed with Tender No., Tender description & Due Date.