

## **Global Tender**

This is a Request for Quote (RFQ) from all vendors for the **Fabrication and Delivery of Photonic Integrated Circuits in Thin-Film Lithium Niobate through photonic foundry multi-project wafer (MPW) run** at the Department of Electrical Communication Engineering (ECE), IISc Bangalore.

### **Section 1 - Bid Schedule**

1.	Tender No.	IISC-ECE-VR-503-2025
2.	Tender Date	December 19 <sup>th</sup> 2025
3.	Item Description	Fabrication of Photonic Integrated Circuits in Thin-Film Lithium Niobate through photonic foundry multi-project wafer (MPW) run
4.	Tender Type	Two bid system: (i) Technical bid (Part-A) (ii) Price bid (Part-B)
5.	Place of tender submission	Chairperson's Office Department of ECE Indian Institute of Science, Bangalore 560012 Attn: Prof. Varun Raghunathan
6.	Last Date & Time for	January 10 <sup>th</sup> , 2025 at 5:00 PM
7.	For further clarification	Prof. Varun Raghunathan Associate Professor ECE department Indian Institute of Science Bangalore 560012 India Email: varunr@iisc.ac.in

## **Section 2 – Eligibility Criteria**

Pre-qualification criteria:

1. The Bidder's firm should have existed for at least 3 years. Bidders should enclose a self-declaration.
2. Only the Original Manufacturers or their authorized representatives across the globe shall participate in the bid.
3. The order will be placed only on the bidder who participated in the bid.
4. Foreign currency quotations should be on CIP Bangalore basis. INR quotes should be on a FOR-IISc Bangalore basis.
5. The bidder should sign and submit the declaration for Acceptance of Terms and Conditions as per -Annexure 4.
6. 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.

### **Section 3 – Terms and Conditions**

#### **A) Submission of Tender:**

1. All documentation in the tender should be in English.
2. Tenders should be submitted in two envelopes (a two-bid system).
  - a. Technical Bid (Part-A) – Technical bid consisting of all technical details and checklist 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 instrument specifications 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 responses of previous columns, 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 the tender, and other commercial terms and conditions.
3. The technical bid and price bid should be placed in separate sealed covers, superscribing on both the envelopes the tender description, 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 should reach the Chairperson Office, Department of ECE, Indian Institute of Science, Bangalore – 560012, India, on or before the due date mentioned in the tender notice. If the due date is a holiday, the tender will be accepted 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., should be indicated separately. The BIDDER should mention GST Registration and PAN in the tender document.
7. If the price is not quoted in the Commercial Bid as per the format provided in the tender document, the bid is liable to be rejected.
8. The purchase committee reserves the right to accept or reject any bid and annul the bidding process and reject all bids at any time prior to the award of the 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 IISc purchase committee, in its sole discretion, unconditionally and without having to assign any reason, reserves the rights:

- a. To accept OR reject the lowest tender, any other tender or all the tenders.
- b. To accept any tender in whole or in part.

c. To reject the tender, offer not confirming the tender terms.

**C) Validity of the Offer:**

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

**D) Evaluation of Offer:**

1. The technical bid (Part A) will be opened first and evaluated.
2. Bidders meeting the required eligibility criteria 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 the decision in this regard shall be binding on the bidders.
4. The award of the 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 the due date and time 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 has accepted the clauses as of the tender, and no further claim will be entertained.
7. No revision of 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 the basic equipment along with accessories selected for installation, operation, preprocessing and post-processing, optional items, recommended spares, warranty, and annual maintenance contract. The purchase committee is looking for the most cost-effective solution for obtaining a new tool. Vendors are encouraged to propose all avenues, including but not limited to buy back of the existing tool, turnkey upgrade of existing tool or purchase of a new tool.

**E) Pre-requisites:**

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

**F) Warranty:**

Warranty period is mentioned under the technical specifications. The vendor should include the cost of any spares expected to be needed during the warranty period, including electronics, subcomponents, and software. If the instrument is defective, it has to be replaced or rectified at the bidder's cost within 30 days from receipt of written communications from IISc, Bangalore. If there is any delay in replacement or rectification, the warranty period should be extended.

**G) SPARES:**

Vendors must provide a detailed list of spares and a user manual with a detailed Bill of Materials for all Parts. It should include the Spares Column with the Manufacturer part Number, and Qty. The vendor should guarantee availability of service and stocks for 7 Years.

**H) Purchase Order:**

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

If the product and service quality 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 the purchase order. The system should be delivered, installed, and made functional within 40 weeks from receipt of purchase order. The supply of the items will be considered as effected only on satisfactory installation and inspection of the system and the inspection of all the items and features/capabilities tested by the IISc, Bangalore. For acceptance, the vendor must demonstrate the technical specifications mentioned in the tender. After successful installation and inspection, the date of taking over of the 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 for the local facility technologists and users.

**J) Payment Terms:**

For INR quotes, 100% payments (except AMC) will be released after completion of delivery, satisfactory installation, and qualification, subject to TDS as per rules. As per GFR no advance payment can be made to domestic vendors unless an equal amount of bank guarantee is provided. For INR quotes, the price must be on FOR-IISc Bangalore basis only. For quotes in foreign currency, the quote must be on a CIP Bangalore basis. The payment terms for the foreign currency quotes should be mentioned along with the commercial offer. AMC costs (if ordered after completion of the warranty period) will be released on a half-yearly basis at the end of each six months, subject to satisfactory services.

**K) Statutory Variation:**

Any statutory increase in the taxes and duties subsequent to the 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 from any breach of contract pertaining to this tender shall be settled in the court of competent jurisdiction located in Bangalore, India.

**M) General:**

1. All amendments, time extensions, clarifications, etc., within the tender's submission period will be communicated electronically. No extension of the bid due date/time shall be considered due to delay in receipt of any document(s) by mail.
2. The bidder may furnish any additional information which is necessary to establish capabilities to complete the envisaged work successfully. It is, however, advised not to provide superfluous information.

3. With prior intimation, the bidder may visit the installation site before tender submission.
4. Any information furnished by the bidder found to be incorrect, immediately or later, would render the bidder liable to be debarred from tendering/taking up work in IISc, Bangalore.

## Section 4 – Technical Specifications

Please note that the requirements and options listed below are only guidelines. It does not disbar bids that do not meet the criteria listed. Vendors are requested to quote for service that meet the criteria to the best extent possible and list deviations. Deviations are NOT an automatic reason for disqualification. They will be discussed by the technical committee prior to making an informed decision.

Technical Specifications	Values/ Ranges
Item name	Fabrication of Photonic Integrated Circuits in Thin-Film Lithium Niobate through photonic foundry multi-project wafer (MPW) run
Process	Thin film lithium niobate (TFLN) multi-project wafer run (MPW)
Material Platform	Etched thin-film lithium niobate photonic structures on silicon dioxide bottom layer on silicon substrate
Die size	5x5 mm <sup>2</sup>
Quantity	Atleast 10 chips
End-facet coating	Un-coated or anti-reflection coating on both facets
Wavelength of operation	1550 nm +/- 10 nm
Waveguide losses	< 1 dB/cm (various waveguide dimensions supported to be provided)
Waveguide crossing – insertion loss	< 0.2 dB
Waveguide crossing – cross talk	> 30 dB
Grating Coupler – insertion loss	<= 9 dB/ coupler (Wavelength and coupling angle to be specified)
Edge coupler – Insertion loss	<= 3dB/edge
Multi-mode interference coupler – Coupling ratio	50:50
Multi-mode interference coupler – Insertion loss	< 0.5 dB
Multi-mode interference coupler – power imbalance	< 0.5 dB
Multi-mode interference coupler – Spectral bandwidth	>= 50 nm
Add-drop Ring Resonator – Quality factor	>= 10 <sup>5</sup>
Add-drop Ring Resonator – Free-spectral range	<= 1 nm
Electro-optic Phase Shifter: Vpi.L value	<= 3 V-cm at 1550 nm wavelength

Electro-optic Mach Zehnder Modulator: Vpi.L value	$\leq 3$ V-cm at 1550 nm wavelength
Electro-optic Mach Zehnder Modulator: Modulation bandwidth	$\geq 50$ GHz
Thermo-optic phase shifter: Ppi value	$\leq 250$ mW

**Other requirements:**

1. Must provide detailed design manual including component definition, I/O ports, and performance modelling.
2. Must provide detailed design rules.
3. Must provide the PDKs for all the processes.
4. PDKs to be compatible with Luceda IPKISS and Lumerical Interconnect
5. Detailed test report supporting the above required specifications to be included with the equipment at the time of delivery
6. Expected performance data sheets to be included with the technical bid
7. The requirements for electronic interfacing of the fabricated chips with electronic boards and drivers to be specified.
8. Please include other options currently available which can be added
9. Cost of shipping to Indian Institute of Science, Bangalore should be included
10. Warranty terms to be specified in the commercial proposal and is subject to negotiations
11. Payment terms to be specified in the commercial proposal and is subject to negotiations
12. List of acceptance tests for on-site inspection at IISc to be provided
13. A set of basic experiments for performing routine checks of acceptable operation with clear instructions to be provided
14. Authorisation letter from OEM manufacturer to be included
15. Vendor must provide complete compliance statement against each technical point



**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: Prof. Varun Raghunathan  
Department of ECE  
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 ECE,  
Indian Institute of Science,  
Bangalore – 560012, India  
Ref: Tender No: XXXXXXXXXX Dated: XXXXX

Dear Sir/Madam

I've carefully reviewed the Terms & Conditions in the above-referred tender. I hereby declare that my company/firm has ----- years of experience in supplying and installing the proposed equipment.

(Signature of the Bidder)

Printed Name

Designation

Seal

Date:

**Annexure-3:**

**Declaration regarding track record**

To,  
The Chair,  
Department of ECE,  
Indian Institute of Science,  
Bangalore – 560012, India

Ref: Tender No: XXXXXXXXXX Dated: XXXXX  
Supply and installation of “Single Photon Avalanche Photodetectors (SPADs)” at ECE  
Department, IISc Bangalore

Sir,  
I've carefully gone through the Terms & Conditions contained in the above referred 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 competent officer in my company / firm to make this declaration.

Or

I declare the following S. 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 and Seal

Date:

**Annexure – 4:**

**Declaration for acceptance of terms and conditions**

To,  
The Chair,  
Dept. of Electrical Communication Engineering,  
Indian Institute of Science,  
Bangalore – 560012, India

Ref: Tender No: XXXXXXXXXX Dated: XXXXX  
Supply and installation of “Single Photon Avalanche Photodetectors (SPADs)” at ECE  
Department, 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 and 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 the technical bid.
3. Bidders should clearly indicate compliance or non-compliance with 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 3 years beyond warranty

Any additional items

S.No.	Description	Cat. Number	Quantity	Unit Price	Sub total
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Addressed to:

The Chair, Department of Electrical Communication Engineering

Attn: Prof. Varun Raghunathan

Dept of ECE

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:

### **A. 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 along with seal.

### **B. Sealed Envelope “B”: Commercial Bid**

1. 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.