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Date: 26-12-2016

Notice Inviting Tender cum Tender Document
(Two Part Public Tender) for the following items:

Supply, Installation, Commissioning of Laser based Lithography tool with sub-micron feature resolution system. As per our technical specifications: **Qty. – 1 No.**

Public Tender No.	**TFR/PD/IC16-618/0033**
Published on	**28-12-2016**
Tender Fees	For Indian Supplier - Rs. 700/- For Foreign Supplier - USD 100
EMD	For Indian Supplier - Rs. 2,10,000/- For Foreign Supplier - USD 3090
Estimated Cost	**Rs. 105.00 Lakhs**
Last Date for Submission of Bid	**25-01-2017 upto 13.00 Hrs.**
Date of Opening Bids (Part A)	**25-01-2017 at 15.00 Hrs.**

Both Technical Bid (Part A) and Financial Bid (Part B) to be submitted within the due date and time in separate envelopes and marked on top as Part A and Part B. These two sealed envelopes should be further put in one Master Envelope super scribed with the Tender No., Due Date in Bold Letters.

Please see attached sheet for conditions of tender.

ADMINISTRATIVE OFFICER
(PURCHASE SECTION)
TIFR-TCIS, HYDERABAD

SCOPE OF SUPPLY - Annexure - A

Technical specifications for Supply, Installation, Commissioning of Laser based Lithography tool with sub-micron feature resolution system at TIFR-TCIS Hyderabad.

Specifications of Direct Pattern Writing System

S.No	Particulars	Specifications
Specifications of Substrates/wafers:		
1	Compatible Substrate types	GaN, SiC, SiC, Sapphire, Silicon etc.
2	Substrate sizes	9 Inch X 9 Inch or more
3	Substrate thickness	Machine should be able to accept the thickness of up to 15 mm or more. On the other hand it should also be able to accept very small and thin wafers of few mm.
Pattern Writing features/specifications:		
4	Writable Area	≥ 190mm X 190mm
5	Exposure Resolutions (At least four different resolutions should be available on the system)	(i) ≤ 0.6 μm (ii) 1.0 μm (iii) 2.0 μm (iv) 5.0 μm Automatic selection of resolution through the software should possible. No manual lens changing should be required.
6	Edge Roughness	± 120 nm or less
7	Level to level Alignment accuracy	≤ 500 nm
8	Line width Uniformity	≤ 100 nm
9	Maximum Write Speed (Supplier should clearly mention the maximum writing speeds at different resolutions)	(i) ≥ 25 mm^2/minute @ 0.6 μm resolution (ii) ≥ 45 mm^2/minute @1.0 μm resolution (iii) ≥ 90 mm^2/minute @2.0 μm resolution (iv) ≥ 180 mm^2/minute @ 5.0 μm resolution
10	Substrate Holding	• Suitable provision for keeping in position all wafers/pieces either through vacuum or friction. • Detailed mechanism of how thin and delicate wafers are handled by the system, should be provided.

		• The firm should explain in detail, what are the system capabilities to facilitate processing of wafers having bow/warp or variable thickness.
Exposure and alignment:		
11	Exposure and Alignment	Exposure Source Type: • Semiconductor diode laser/LED based source only
		Guaranteed lifetime of exposure source should be ≥ 20000 hours
		Exposure Wavelength: ≤ 385 nm (405 nm not acceptable)
		Source Power should be clearly specified by the supplier
		• Exposure control: Automatic and manual
		• Grey scale exposure mode for 3 dimensional patterning.
		• Focus: Automatic
Stage Assembly Specifications:		
12	Stage travel range:	• X axis: 200 mm or more • Y axis: 200 mm or more • Z axis: 30 mm or more
13	Stage resolution/minimum stage step:	• X axis: 50 nm or less • Y axis: 50 nm or less • Z axis: 100 nm or less
14	Accuracy:	• X axis: ± 200 nm or better • Y axis: ± 200nm or better • Z axis: ± 200nm or better
15	Firm should explain in detail how the stitching errors due to stage movement are avoided or rectified in the quoted system	
Photoresist details:		
16	Photoresist details	The system should be capable of processing G,H and I band resists, included SU8.
Optical Microscope/camera, profiler details:		
17	System should have high quality Camera system for substrate inspection, automatic and manual alignment and measurement functions including dimension measurements should be provided.	
18	Resolution of the camera image formed: 1280 x 1024 or more	

19	There should be provision for automatic change of microscope magnification via software. No manual change of Lens should be needed.	
20	System must have a built in 2 dimensional optical profiler for examining deposited layers, exposed resists and other processes.	
21	An in-built automatic Wafer inspection tool will be preferred.	
Control hardware and software:		
22	Acceptable Data Formats	TIFF, CIF,GDSII and BMP
23	Control Hardware and Software	• System should have control electronics and software for controlling autofocus system, image processing hardware etc. The firm should provide detailed features and capabilities of data processing and control software.
24	Workstation	• Windows 10 based Computer for system control and data conversion supplied.
25	Write time estimation and intimation	• The system should have the capability to calculate automatically the estimated time required to expose the substrate before starting of the writing process.
26	System Environment Stability	• Environment chamber for controlled and stable environment during system operation should be provided with the system. The details of the variables controlled and their limits should be provided.
27	Mask design software	• Latest version of any standard mask design software or layout editor is to be supplied preloaded with the system.
Acceptance test Procedure:		
28	Acceptance Test Procedure	I. After the successful installation, Supplier will include in its schedule training of three people for two days. it specifically includes: Loading of substrate, alignment, setting up exposure and all other parameters and unloading. II. The firm will have to demonstrate the Minimum feature size, speed and other alignment parameters at our site.
Other details:		
29	System accessories	• An active or passive vibration Isolation/cancellation should be provided along with the system. • The firm is required to supply suitable vacuum pump (oil free) compatible to the class 100 cleanroom, if applicable.
30	Equipment and operator safety	System should be supplied with all necessary safety interlocks and switches for operator safety with suitable light excluding features. Details of the same to be mentioned.

31	Service support	• Vendors having their service support/office in India would be preferable. There must be a provision for the Remote control of the system for trouble shooting purposes.
32	Warranty	• Minimum one year Warranty.
33	Consumables	The consumables needed for five year trouble free operation are to be listed and must be provided with the system.

Optional Items/Accessories

The optional Accessories will not be considered for evaluation of lowest bidder. The Optional items may be procured based on requirement from the techno commercially qualified lowest bidder.

Relocation of the equipment: Dismantling of equipment, Shifting/transportation of material from TCIS transit campus to TCIS, FReTB new campus, Reinstallation, calibration of equipment and successful commissioning is supplier's scope if any. However a separate quote for this relocation may be provided along with the financial bid with the minimum validity period of one year extendable further if required from the date of installation of the instrument. This quote will not be considered for evaluation of lowest bidder.

Supply Order Details of Laser based Lithography tool with sub-micron feature resolution system with Accessories to Other Firms

Annexure – B

S.No.	Name of the company with full address	Name of the Project	Purchase Order No. & Date	Brief Item Description with Model No.	Item Value in Currency
Signature					
Name					
Designation					
Name of the Company					
Date					
Seal of the Company					

Terms and Conditions

1. **PART "A" (Technical Bid) consisting of Technical Bid with Commercial Terms** and **PART "B" (Financial Bid) consisting of only Price** shall be submitted in **separate** sealed envelopes duly superscribed with the tender enquiry number, and the due date in bold letters, addressed to the Purchase Officer, Tata Institute of Fundamental Research, 21, Brundavan Colony, Gandipet Road, CBIT Post Office, Hyderabad -500 075.The envelopes should be clearly marked on top as either PART "A" or PART "B".

   The two sealed covers should be further put in a master cover superscribed with the Tender Enquiry No., Due Date in bold letters, addressed to the Purchase Officer, Tata Institute of Fundamental Research, 21, Brundavan Colony, Gandipet Road, CBIT Post Office, Hyderabad - 500 075. The sealed master envelop has to be delivered by hand/courier at the security Gate Office of TIFR-TCIS on or before 13.00 hrs. on the due date specified. The technical bid will be opened in the presence of attending tenderers at 15.00 hrs. on the due date at Purchase Section, TIFR-TCIS, Hyderabad. Tenders submitted after 13.00 hrs. on due date will not be considered.

2. **In case the PART "A" and Part "B" bids are not sealed in separate envelopes the tender will be rejected.**

3. The technical bid should not contain any indication of the price. The bidder should take special care not to mention anything related to pricing and costing aspect of whatsoever nature. The technical bid should include/contain only technical specifications, technical literature, drawing, quantity, manufacturing and delivery schedule, mode and terms of payment, mode of dispatch, the quantum and percentage of statutory levies payable by the purchaser as extra and all related commercial terms and conditions for the supply and for the services like erection and commissioning to be rendered by the tenderer. The details of the validity of the tender should also be indicated along with the commercial details.

4. After scrutiny of Technical Bids, Financial bids of only those bidders who are shortlisted on technical basis will be opened at on later date. The opening date, time and venue will be intimated to the technically successful bidder.

5. **<u>Tender Document Fee:</u>**
   a) **For Indian Supplier**: Tender fee for **Rs. 700/-** (Non-refundable) in the form of D.D. in favour of "TIFR Centre for Interdisciplinary Sciences", payable at Hyderabad to be enclosed with the Technical Bid (Part - A).

   b) **For Foreign Supplier**: Tender fee of **USD 100** (Non-refundable) in the form of advance cheque in favour of "TIFR Centre for Interdisciplinary Sciences", payable at Hyderabad to be enclosed with the Technical Bid (Part A).

6. **<u>Earnest Money Deposit (EMD)</u>:**
   a) **For Indian Supplier**: Earnest Money Deposit (EMD) for **Rs. 2,10,000/-** in the form of D.D. in favour of "TIFR Centre for Interdisciplinary Sciences", payable at Hyderabad to be enclosed along with the technical Bid (Part - A).

   b) **For Foreign Supplier:** Earnest Money (EMD) for **USD 3090** in the form of advance cheque in favour of "TIFR Centre for Interdisciplinary Sciences", payable at Hyderabad to be enclosed with the Technical Bid (Part - A).

   EMD shall be interest free and it will be refunded to the unsuccessful bidder without any interest. EMD will be forfeited if the bidder withdraws or amend impairs or derogates from the tender in any respect.

7. **Bidders who have not accepted the job/order awarded to them or withdrawn from the tender process OR whose EMD/Security deposit has been forfeited in the past their bids will not be considered and treated as ineligible / disqualified.**

8. After downloading the documents please inform your company details such as name, address, telephone nos., contact person and email address etc. by email to us. (harid@tifrh.res.in, srinub@tifrh.res.in) to enable us to inform prospective bidder for any corrigendum/changes if any; in the Tender document before due date.

9. Quotations must be valid for a period of 180 days from the due date.

10. Tenders containing correction, overwriting will not be considered. Late or delayed/Unsolicited quotations/offers shall not be considered at all. These will be returned to the firms as it is. Post tender revisions/corrections shall also not be considered.

11. Tenderer should sign on all the pages of the technical bid and the price bid.

12. The price quoted for Import item must be on following basis:

    a) Ex-Work/factory duly packed airworthy/seaworthy and of international standard
    b) FOB/FCA
    c) CIF Hyderabad, Airport Port (all-inclusive i.e. Cost of Goods, Packing, Insurance, Inland transportation, freight etc.)

    For local item /supply, offer should be on FOR basis (i.e. total landed cost for delivery at TIFR-TCIS, Hyderabad).

    The dimension of the item (viz. H, W, L, weight etc.) shall be specifically stated and also mention whether the mode of shipping the item is Airworthiness / Seaworthiness or both. Accordingly the mode of shipment will be decided by TIFR-TCIS.

    Price must be quoted in the Price Bid Format attached herewith as "Part –B" (Financial Bid).

13. If equipment offered is to be imported, arrangements for import will be made by us.

14. Tenders who do not comply with any of the condition are liable to be rejected.

15. The Institute shall be under no obligation to accept the lowest or any other tender received in response to this tender notice and shall be entitled to reject any tender without assigning any reason whatsoever.

16. TIFR reserves the right to place the order for part/reduced quantity than what is specified in the tender.

17. **PAYMENT TERMS**: **80%** payment shall be made through irrevocable L/C on presentation of complete and clear shipping documents and balance **20%** of the amount shall be released after the receipt, installation, commissioning and acceptance of the equipment and on submission of "**Performance Bank Guarantee (PBG)**" or "**Standby Letter of Credit**" for an amount equivalent to 10% of the Purchase Order Value. The PBG or "Standby Letter of Credit" shall be valid for a period of **60 days** beyond the date of warranty period. The PBG should be from State Bank of India & Associates (or) any one of the Nationalized Banks.

18. For Import cases: **No Agency commission will be paid as per Govt. of India rules**.

19. TIFR is exempted from paying of Custom Duty under the notification No.51/96 dated 23.07.1996, Excise Duty under the notification No.10/97 dated 01.03.1997, for all procurements/supply meant exclusively for Educational, scientific and research purpose. Whenever the exemption certificate not honored by the authorities, the applicable duty will have to be paid. Hence Excise & Custom duties, if any, should be shown separately.

20. **SALES TAX**: TIFR does not have any exemption/concession on payment of Sales Tax/VAT and we are not authorized to issue any Sales Tax Form ‘C’ & ‘D’

21. **The Supplier shall arrange to ship the ordered materials within the mutually agreed delivery period mentioned in the order unless extended with/without penalty.**

    a) In case of delay in supply on part of the supplier, a penalty @0.5% per week of order value will be charged for delayed period subject to a maximum of 10% order value.

    b) If the delay in the shipment of the ordered materials attributable to the supplier exceeds agreed time period from the date of original agreed upon date of shipment and extended with/without penalty, the TIFR-TCIS, Hyderabad shall have the right to cancel the contract / purchase order and recover the liquidated damages from other dues of the party or by legal means. It will also affect the other/future business dealings with such suppliers.

    c) The same rate of penalty shall be applicable for late installation of the equipment/instrument also.

22. **COMMENCEMENT OF WARRANTY PERIOD**: The warranty period of an item shall commence from the date of receipt of the item in good working condition and satisfactory installation/commissioning/demonstration at the project site.

23. **ANNUAL MAINTENANCE CHARGES**: The bidder must mention in the quotation, the rate/amount of annual maintenance charges, if we opt for maintenance contract after expiry of the warranty period.

24. Specifications are basic essence of the product. It must be ensured that the offers must be strictly as per our specifications. At the same time it must be kept in mind that merely copying our specifications in the quotation shall not make the parties eligible for consideration of the quotation. A quotation has to be supported with the printed technical leaflet/literature of the quoted model of the item by the quoting party/manufacturer.

25. **OBSERVANCE OF LOCAL LAWS**: Wherever applicable (particularly for Local vendors), the vendor / contractor shall comply with all law, statutory rules & regulations etc. The vendor/ contractor shall obtain all necessary permits / approval from the local Governing Body, Police, and other concerned Authorities as may be required under law. The vendor /contractor shall pay all types of taxes, fees, license charges, deposits, duties, tolls, royalty or other charges that may be leviable account of any of the operations connected with the execution of this work/ contract.

26. In case of any interpretational issues arises in this tender, the interpretation/decision of TIFR TCIS shall be final and binding on the bidder.

27. It is the responsibility of the vendor to make sure that the system being proposed can be exported to India with TIFR TCIS as the end user. All clarificatory documentation must be submitted with the Bid.

28. TIFR TCIS reserves the right to ask for or to provide any clarification, changes after the release of this tender. Any changes or clarifications provided by TIFR-TCIS, Hyderabad may be checked at TIFR-TCIS website: http://www.tifrh.res.in/index.php/commercial-tenders

ADMINISTRATIVE OFFICER
(PURCHASE SECTION)
TIFR-TCIS, HYDERABAD

Financial Bid for Laser based Lithography tool with sub-micron feature resolution system with Accessories (Part – B)

Annexure – C

TIFR- TCIS Enquiry No & Date: ____________
Due date: ______________
Bidder's Quotation Ref No. & Date:_______________
Financial Bid (Bidders must quote their rates using this Format)

S.No.	Item Description as per tender	Make/Brand/ Type	Qty.	Rate per unit (Currency)	Basic Cost of main item (In Currency)
A.					
B.	Ex-Works cost (Duly packed Airworthy/Seaworthy of international standard)				
C.	FOB /FCA Cost (Name of Airport_______)				
D.	CIP/CIF Cost (Upto Hyderabad Airport)(all inclusive i.e. Cost of Goods, Packing, Insurance, Inland transportation, freight etc.)				

Note:

1. All the column should be appropriately filled and not left blank.
2. Do not include any other charges, taxes, duties etc. in the Basic Cost of the item.
3. Any accessories, optional items should be shown separately using above format.
4. Use separate sheet for detail description, specification of the item, but prices should be quoted in same format.
5. Prices quoted in Indian Currency should be on F.O.R. basis and mentioned separately using different table format showing all the applicable taxes/Duties like Excise, VAT, service Tax, Freight & Transportation charges and installation charges etc.
6. TIFR-TCIS being educational & research institute, discounted price shall be offered.

Signature of the Bidder

Name, Address contact no ________________________

& email id of the bidder/ ________________________

Company with company's Stamp or Seal___________________

Date: _____________

Place: _____________