



To Whom It May Concern

Domestic Tender to supply Scrubber System by local vendor only.

This is an RFQ (Request for Quote) for procurement of a Mask Aligner tool at CeNSE, IISc, Bangalore. The tender invitation is for Indian Original Equipment Manufacturer (OEM)/Class-1/Class-2 or their Indian authorized distributor only.

CeNSE is a multidisciplinary research department at IISc that houses a 14,000 sq. ft. cleanroom and characterization facility used by 50 faculty members from various disciplines at IISc. Consequently, any tool in CeNSE receives significant exposure to scientific community at IISc and beyond. The vendors are requested to factor in the value of this exposure in to their quotes.

<http://nnfc.cense.iisc.ac.in/>

<http://www.mncf.cense.iisc.ac.in/>

<https://www.inup.cense.iisc.ac.in/>

Procedure

1. Vendors will be required to submit a technical proposal and a commercial proposal in **two separate sealed envelopes**. Only vendors who meet the technical requirement will be considered for the commercial negotiation.
2. **The deadline for submission of proposals is the 5.30pm, 29th June 2022 Indian Standard Time.** Proposals should arrive at the National Nanofabrication Centre (NNFC), Indian Institute of Science, Bangalore 560012, India, by the above deadline.
3. The decision of purchase committee will be final.
4. The technical proposal should contain a compliance table with 5 columns. The first column must list the technical requirements, in the order that they are given in the technical configuration below. The second column should describe your compliance in a “Yes” or “No” response. If “No” the third column should provide the extent of the deviation (please provide quantitative responses). The fourth column should state the reasons for the deviation, if any. The fourth column can be used to compare your tool with that of your competitors or provide details as requested in the technical requirements table below.



5. Any additional capabilities or technical details, that you would like to bring to the attention of the purchase committee, can be listed at the end of the technical table.
6. If multiple systems can fulfill the requirements, vendors can submit multiple bids.
7. In the commercial bid, please provide itemized cost of the system and *required* accessories, such as software, power supply, etc.
8. As an option, please provide itemized cost for any *suggested* accessories/add-ons that may enhance the usability, capability, accuracy or reliability of the tool. Vendors are encouraged to quote for as many add-ons as their tool portfolio permits.
9. The commercial comparison will be done as per Government of India rules, specifically GFR 2017. Note that GFR has recently been amended.
10. As per recent edits to the GFR, there are three classes of vendors distinguished by their “local content”. In the cover letter, vendors must mention which applies to them:
Class 1 supplier: Goods and services have a local content of equal to or more than 50%
Class 2 supplier: Goods and services have a local content more than 20% but less than 50%
Non-local supplier: Goods and services have a local content of equal to or less than 20% 5. Quotes will be entertained from Class 1 or Class 2 suppliers only.
11. Please indicate the warranty provided with the tool. Warranty of 3 years or more is preferred.
12. The quotations should be on FOR-IISc Bangalore basis in INR only.
13. Provide itemized cost for *required* spares for 2 years of operation. For sake of this calculation, the vendor may assume active tool usage of 20 hours/ week. This number will be used to estimate the life cycle cost of the tool.
14. Clarify if periodic (preventive) maintenance be done by a trained on-site engineer or requires a specialist from the OEM.
15. If maintenance requires OEM, as an additional option, provide cost of an annual maintenance contract (AMC) for 3 years, post warranty. The AMC must cover 1 scheduled and 1 emergency visit per year. It must also indicate who will service the AMC, an Indian agent or the OEM. The AMC cost must also include an itemized list of spares that are essential for the scheduled visits.
16. The RFQ must include references of 3 previous installations, preferable in India. Please provide the names and contact addresses of the referees, so that the committee can contact them independently.



17. Any questions can be directed to Dr. Savitha P, GF-20, Centre for Nano Science and Engineering, Indian Institute of Science, Bangalore 560012, India. (savithap@iisc.ac.in)

Technical Requirements

1.	Primary application	<ul style="list-style-type: none"> • Ability to do routine photolithography with semi-automatic alignment capability on substrates of arbitrary small pieces up to 4-inch wafer. • Ability to process mask sizes from 3" x 3" upto 5" x 5".
2.	System configuration	<ul style="list-style-type: none"> • System should be prepared for manual alignment stage with: Accurate contact wedge and thickness compensation unit. • System should have the alignment gap adjustable from 10 to 50 μm, top-side Alignment (TSA) accuracy should be $< 0.5 \mu\text{m}$ and transmitted Infrared Alignment (IR) accuracy should be $< 5 \mu\text{m}$. • Mechanical resolution of alignment stage X, Y axes of the system should be less than or equal to $0.1 \mu\text{m}$. • System should have capability for mask holder adaption with vacuum holding designed for quartz, or glass masks. • Machine should capable to handle mask size ranging from 3"x3" to 5"x5". • System should have the provision to handle standard mask and substrate thicknesses up to 4 mm and substrate size from 5 mm x 5 mm to 100 mm x 100 mm. • Mask holder has to be provided with stop pins for pre alignment position. • Capable to handle gap, soft, hard and vacuum contact expose modes. Vendor should specify the distances for each mode. • System should have high precision manually adjustable top side alignment microscope for positioning the mask and substrate with minimum three objectives: preferably 5x, 10x and 20x. • Video system to display the microscope image on a screen.
3.	Lamp type and Optics	<ul style="list-style-type: none"> • Hg lamp with intensity non-uniformity $< 4\%$ across 4" wafer, working on constant dose or constant intensity mode.

		<ul style="list-style-type: none"> Multiple wavelength ranges along with optical filter of 240 nm, 365nm and 405nm. Also, the system optics should enable an easy switch between different wavelengths for UV and DUV processes.
4.	Chuck	<ul style="list-style-type: none"> The chuck should contain the guiding pins for precise loading/unloading of 2" and 4" wafer (for soft, hard and vacuum contact modes).
5.	Resolution	<p>System should perform, the line, space resolution as per the below specifications.</p> <ul style="list-style-type: none"> Less than or equal to 1 μm line and space under hard contact. Less than or equal to 2 μm line and space under soft contact. Less than or equal to 3 μm line and space under proximity contact. Less than or equal to 0.8 μm line and space under vacuum contact. <p>Also, vendor should specify the achievable resolution process conditions (wafer size, resist type, temperature and humidity etc.,)</p>
6.	Accessories	<ul style="list-style-type: none"> Vendor should provide the Intensity meter (optometer) with necessary probe sensors for 240 nm, 365 nm and 405 nm. Dry Vacuum pump for sample and mask holding. One Operator manual for cleanroom. Anti-vibration table.
7.	Optional Accessories to be quoted separately	<ul style="list-style-type: none"> System should have IR back side alignment system with 2" & 4" wafer IR chucks. Chucks for 2" and 1" wafer along with corresponding Mask Holder.
8.	Footprint & weight	<ul style="list-style-type: none"> The system should be compatible with better than class 100 cleanroom environment. Please specify the total footprint in cm x cm, and weight.
9.	Periodic Maintenance	<ul style="list-style-type: none"> The system should require minimal maintenance. Mention the recommended preventive maintenance schedule for the system. Any accessories needed for periodic preventive maintenance for 3 years, should be mentioned in separately itemized quote.



		<ul style="list-style-type: none"> The system should be supported by a trained representative and should have a 48hour window of response.
10	Installation	<ul style="list-style-type: none"> During the installation all the specifications of the processes should be verified for acceptance by the customer.
11	Power & utilities	<ul style="list-style-type: none"> Mention the power requirement. Mention any utility requirement (water, air, exhaust, etc.)
12	Safety	<ul style="list-style-type: none"> Mention any special safety requirement of the tool.
13	Warranty	<ul style="list-style-type: none"> 12 months from the date of commissioning and acceptance of equipment.
14	Pre-purchase testing	<ul style="list-style-type: none"> To ensure the equipment conforms for specifications, the committee requires the vendor to perform some standard tests <i>before</i> the purchase process is complete. The validity of the tender will hinge on the successful and accurate measurement of these test samples. The vendor must conclude the testing and submit the data within 1 week of receipt of samples.
15	Acceptance tests	<ul style="list-style-type: none"> Patterning 0.6 um lines with spacing of 1 µm. Alignment of 2um lines with an accuracy of 1 µm.
16	Eligibility Criteria	<ul style="list-style-type: none"> The bidder must have supplied similar systems to at least 3 micro/nanofabrication facilities in India or abroad. Please provide the relevant list. Original Invoice, Original Warranty Certificate, Original Test Reports should be produced for all imported items from OEM (Original Equipment Manufacturer) at the time of supply of the equipment. System Catalogue should be produced with the Technical Bid. CE Certification must be provided for the proposed system. The CE certificate should be provided with the Unit. Manufacturer should have ISO or equivalent international standard certificate.



	<ul style="list-style-type: none">• Supplier will support the user with all the spares for a minimum period of 10 years.• Details of experienced service engineer including contact detail should be provided in tender document.• Up to date sales tax or GST clearance certificate.
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Thanking you,

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