



Request for quote for procurement of a Scrubber for use in CVD deposition

- The GEECI (Gallium Nitride Ecosystem Enabling Centre and Incubator) at SID-Indian Institute of Science is seeking bids from qualified industries for Scrubber System. The specifications for the Scrubber are listed in Table 1.
- Companies need to submit two bids, a technical bid and a commercial bid, in two separate sealed envelopes. The bids should be submitted no later than 21 days from the date of posting of this tender, as listed on the website date/time stamp, and by 5 pm on the 15th day or next weekday in case the 21st day falls on a weekend or a national holiday.
- **Quote should come only from Indian Original Equipment Manufacturer (OEM) or their Indian authorized distributor. The quotations should be in INR only and must include shipping cost.**
- Both technical and commercial bids should be addressed to “The Chief Executive, SID, IISc, Bangalore 560012.”
- The envelopes should be addressed to “Prof. Srinivasan Raghavan, CeNSE, IISc, Bangalore, 560012” and submitted to the office at CeNSE, IISc in Room No. GF 15 between 9 am and 5 pm.
- All questions regarding this tender should be addressed to Prof. Srinivasan Raghavan at the email address sraghavan@iisc.ac.in
- Post such submission all vendors should send an email to sraghavan@iisc.ac.in with the subject line: “GEECI_Bidder’s name_Tool Name” to intimate him of the submission within one day.
- Deviations from the technical specifications requested are allowed. Such deviations must be highlighted and justified. Their acceptance or rejection will be left to the discretion of the technical committee.
- The Scrubber sought will be used at the Centre for Nano Science and Engineering (CeNSE), Indian Institute of Science (IISc). IISc is India’s No. 1 institution on higher learning and the Centre for Nano Science and Engineering is home to one of the best academic fabs in the world.
- The technical response, corresponding to the tool being offered, should be in the form of a compliance table with at least 5 columns. Serial number in column 1. Each of the numbered technical items below should be addressed in a separate row of the table in column 2. Compliance to this requirement, in Yes/No, deviation from it and justification should be provided in the neighbouring columns 3-5. Post the opening of a hard copy of the technical bid the committee will request for a soft copy of the files for further processing. Companies should NOT mail soft copies of the files unless specifically requested for.
- Detailed technical specifications of the Scrubber being offered should be included. .
- 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.
- Vendors are encouraged to highlight the advantages of their Scrubbers from the competitors
- If multiple systems can fulfil the requirement vendors can submit multiple bids..
- The commercial bid should be broken up to the maximum extent possible into separate items with a cost against each to enable better comparison of price for various configurations across the bidders. As an option, please provide itemized cost for any suggested accessories/add-ons that may enhance the usability,



capability, accuracy or reliability of the Scrubber. Vendors are encouraged to quote for as many add-ons as their portfolio permits.

- 1) Only vendors who are compliant with the technical requirements will be considered for commercial comparison. The bid is awarded to the lowest cost vendors (referred as L1).
- 2) The commercial comparison is made as per Government of India rules, specifically GFR 2017. Note that GFR has recently been amended. 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:
 - a. Class 1 supplier: Goods and services have a local content of equal to or more than 50%.
 - b. Class 2 supplier: Goods and services have a local content more than 20% but less than 50%
 - c. Non-local supplier: Goods and services have a local content of equal to or less than 20%
- 3) This tender will only apply entertain Class 1 or Class 2 suppliers. Vendors must provide a self-declaration of what Class they belong to.
- 4) In the commercial bid, please provide an itemized cost of the system and required accessories, such as detector, cabling, panel, software, piping etc.,
- 5) As an option, please provide itemized cost for any suggested accessories/add-ons that may enhance the usability, capability, accuracy or reliability of the system. Vendors are encouraged to quote for as many add-ons as their tool portfolio permits.
- 6) Mention GST separately. IISc will be taxed at 5%. IISc will provide the GST exemption certificate against invoice.
- 7) Please indicate the warranty provided with the tool. Warrant of 3 years or more is required.
- 8) As an option, provide itemized cost for required spares and consumables for 2 years of operation from the time of installation.
- 9) Clarify if periodic (preventive) maintenance be done by a trained on-site engineer or requires a specialist from the OEM.
- 10) 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.
- 11) The technical proposal must include references from 5 previous installations in India. Please provide the names and contact addresses of the referees so that the committee can contact them independently.

Table 1: Technical Requirements

1.	Primary application	<ul style="list-style-type: none">• System should be based on a dry Chemisorption media and capable of handling multiple semiconductor process gases (hazardous, toxic and flammable)• The media should bind the gases in an irreversible reaction and no further scrubbing action should be necessary
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2.	Secondary application	<ul style="list-style-type: none"> Interface with the facility control software Should offer PLC based system control
3.	Tool capability	<ul style="list-style-type: none"> Absorb and form stable solid by-products with various toxic, hazardous and flammable gases as per list provided in the Gas flow column Should not require any other processes: like heating, moisturization
4.	Tools to be connected to the scrubber	<ul style="list-style-type: none"> MOCVD, ALD
5.	Expected Gas flows from MOCVD and ALD tool	<ul style="list-style-type: none"> Nitrogen : 220 SLPM Hydrogen : 200 SLPM Oxygen TMGa (Trimethylgallium) : traces TMAI (Trimethylaluminum) : traces TMIn (Trimethylindium) : traces Cp₂Mg : traces CP₂Fe : traces SiH₄ (Silane) NH₃ (Ammonia) : 38 SLPM Cl₂ (Chlorine) C₂H₄ (Ethylene) TiCl₄ (Titanium tetrachloride) : traces DEZ : (Diethylzinc) TDMAH (Tetrakis(dimethylamino)hafnium): traces TEMAH (Tetrakis(ethylmethylamino)hafnium) traces BDEAS (Bis(diethylamino)silane) Si₂Cl₆ (Hexachlorodisilane)
6.	Tool requirements	<ul style="list-style-type: none"> Should be able to neutralize Cl₂ based by products coming from MOCVD/ALD systems Warning, systems should be available indicating the end of lifetime for the absorbing media Over pressure release valves and warning systems should be available All gas flows will be limited as per Row 5.
7.	Footprint& weight	<ul style="list-style-type: none"> The system should be compatible with placing in the clean corridor area outside the main cleanroom. Please specify the total footprint in cm x cm, and weight. Real estate is valuable, a compact system preferred.
8.	Periodic Maintenance	<ul style="list-style-type: none"> The system should require only minimal maintenance. Mention the recommended preventive maintenance schedule for the system. Any accessories needed for periodic preventive maintenance for 3 years e.g., O-rings, should be mentioned in separately the itemized quote.

		<ul style="list-style-type: none"> • Can the preventive maintenance be done by a trained on-site engineer or requires a specialist from the OEM? If the latter, please provide cost of a 3-year AMC with required kit/consumables. • The system should be supported by a trained local representative and should have a 48hour window of response • Absorbing media should locally available, and refilling should be possible in India
9.	Installation and Training	<ul style="list-style-type: none"> • Installation and training at customer site, by the experts from principals should be part of the package. • During the installation all the specifications of the tool should be verified for acceptance by the customer. • If periodic maintenance can be done by the on-site engineer, please include the cost of training the engineer.
10	Power& utilities	<ul style="list-style-type: none"> • The instrument should work with Indian standards • Mention the power requirement. • Mention any utility requirement (water, air, exhaust, etc.)
11	Safety	<ul style="list-style-type: none"> • Mention any special safety requirement of the tool • The tool must come with a complement of interlocks to prevent common user errors. • Sensors should be provided to detect ppb levels of gas leaks and utility failures • Any malfunction should have an audible alarm system. • Flashing lights during emergencies should also be an option
12	Recommendation	<ul style="list-style-type: none"> • The system must submit references from at least 3 previous installations where the system has been connected to absorb gases specified in Row 5. • The names and contact addresses of the referees must be submitted with the proposal, so the purchase committee can contact them independently.

Thankyou