



Request for quote and specifications for ALD precursors and Specialty gases for use in device processing of III-nitride deposition technology

- The GEECI (Gallium Nitride Ecosystem Enabling Centre and Incubator) at SID-Indian Institute of Science is seeking bids from qualified industries for ALD precursors and speciality gases for Picosun R-200 Advanced Plasma Enhanced ALD Reactor. The specifications for these consumables 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 21st day or next weekday in case the 21st day falls on a weekend or a national holiday.
- 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 chemicals 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 ALD precursors, gas cylinders and speciality gases being offered should be included. Specifications must include purity certificate and shelf life of the ALD precursors and speciality gases.
- 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 ALD precursors over comparable chemicals from the competitors.
- 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 ALD precursors. Vendors are encouraged to quote for as many add-ons as their portfolio permits.

Table 1: Technical Specifications for ALD precursors and specialty gases

S. No.	Name of ALD precursor	Bubbler specifications	Purity	Fill Quantity
1	TMA (Trimethyl aluminium) CAS No. 75-24-1	<p>Will be provided by SID-IISc</p> <ul style="list-style-type: none"> • Picosun make Picosolution 600 container • Conforms to standard DOT 4B300 • Outlet Connections 1/4" VCR • Filling port 1/2" VCR • Vapour Pressure >10mbar • Total Capacity 915 ml 	Electronic grade (Purity of 5N or more)	685 ml
2	TiCl ₄ (Titanium tetrachloride) (TiCl ₄) CAS No. 7550-45-0	<p>Will be provided by SID-IISc</p> <ul style="list-style-type: none"> • Picosun make Picosolution 600 container • Conforms to standard DOT 4B300 • Outlet Connection 1/4" VCR • Filling port 1/2" VCR • Vapour Pressure >10 mbar • Total Capacity 915 ml 	Electronic grade (Purity of 5N or more)	685 ml
3	DEZ (Diethylzinc) CAS No. 557-20-0	<p>Will be provided by SID-IISc</p> <ul style="list-style-type: none"> • Picosun make Picosolution 600 container • Conforms to standard DOT 4B300 • Outlet Connection 1/4" VCR • Filling port 1/2" VCR 	Electronic grade (Purity of 5N or more)	685 ml

		<ul style="list-style-type: none"> Vapour Pressure >10 mbar Total Capacity 915 ml 		
4	<p>TEMAH (Tetrakis(ethylmethylni no)hafnium)</p> <p>CAS No. 352535-01-4</p>	<p>Will be provided by SID-IISc</p> <ul style="list-style-type: none"> Picosun make Picohot 300 container Conforms to standard DOT 4B300 Outlet Connections 1/4" VCR Maximum operating temperature 400 °C Filling port 1/2" VCR Inlet connection 1/4" VCR Vapour Pressure >1mbar Total Capacity 570 ml 	Electronic grade (Purity of 5N or more)	440 ml
5	<p>BDEAS (Bis (diethylamino)silane)</p> <p>CAS No. 27804-64-4</p>	<p>Will be provided by SID-IISc</p> <ul style="list-style-type: none"> Picosun make Picohot 300 container Conforms to standard DOT 4B300 Outlet Connections 1/4" VCR Maximum operating temperature 400 °C Filling port 1/2" VCR Inlet connection 1/4" VCR Vapour Pressure >1mbar Total Capacity 570 ml 	Electronic grade (Purity of 5N or more)	440 ml
6	<p>Si₂Cl₆ (Hexachlorodisilane)</p> <p>CAS No. 13465-77-5</p>	<p>Will be provided by SID-IISc</p> <ul style="list-style-type: none"> Picosun make Picohot 300 container Conforms to standard DOT 4B300 	Electronic grade (Purity of 5N or more)	440 ml

		<ul style="list-style-type: none"> • Outlet Connections 1/4" VCR • Maximum operating temperature 400 °C • Filling port 1/2" VCR • Inlet connection 1/4" VCR • Optional pressure relief connection with 1/4" VCR • Vapour Pressure >1mbar • Total Capacity 570 ml 		
7	Oxygen (99.5 %O ₂ +0.5%N ₂ mixture)	<ul style="list-style-type: none"> • 50-liter cylinder 	Purity of 5N or more	50 liters

Terms and conditions:

1. Vendors can quote for a subset of the chemicals above.
2. Shipping: On all the items the cost of shipping up to IISc. IISc will help the shipping company to take care of the customs clearance at Bangalore Airport. Please include your payment option. IISc would prefer payment after receipt of the chemicals.
3. References: Bidders should provide details of other locations/users across the globe where similar material was delivered.
4. The lead time for the delivery of the material should preferably be less than 4 weeks from the date of receipt of our purchase order. The smallest lead time will be appreciated. Else, the lead time should be specified.
5. The validity period of the quotation should be 90 days at least.
6. The vendor should be flexible with parts delivery. We may spread the entire requirement into 3 years and ask for delivery in lots.
7. In case of the ALD precursors the use of these chemicals in III-nitride production environments elsewhere may be listed in the technical bid.
8. The quantity of ALD precursor and specialty gases to be purchased may change which is left to the discretion of the technical committee.