



वैज्ञानिक तथा औद्योगिक अनुसंधान परिषद्
Council of Scientific & Industrial Research
राष्ट्रीय वांतरिक्ष प्रयोगशालाएं
National Aerospace Laboratories

INVITATION FOR TENDERS

No. NAL/PUR/MSD/001/24 (AMC)

Dated: 30-Apr-2024

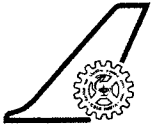
CSIR – National Aerospace Laboratories (NAL), Bengaluru, Karnataka, Republic of India, is one of the premier research laboratories under aegis of Council of Scientific and Industrial Research (CSIR), an autonomous body under the Department of Scientific and Industrial Research, Government of India, New Delhi. CSIR-NAL is a Science and Knowledge based Research, Development and Consulting Organization. It is internationally known for its excellence in Scientific Research in Aerospace Engineering.

The Director, CSIR-NAL invites online quotation(s) for the procurement of the following item(s) for day to day research work.

Sl. No	Description of Item(s)	Unit	Quantity
1	AMC for Chemical Vapour Infiltration Reactor, Make: ATL Ltd, UK. <i>Scope of work at Annexure 1</i>	Nos	1

Single /Double Bid	Single	Tender Type	OPEN Tender
Bid Security (EMD) (in INR)	Bid Security Declaration should be enclosed with the quotation	Bid submission end date	23-05-2024 10.00 Hrs
Performance Security	Nil	Bid opening date	24-05-2024 11.00 Hrs

1. Tender document(s) may be downloaded from the Central Public Procurement Portal i.e., <https://www.etenders.gov.in>. Aspiring Bidders' who have not registered in the portal can do the same at free of cost before participating in our tendering process. Bidders are advised to go through instructions provided at 'Instructions for Online Bid Submission', in the portal.
2. Tenderer's can access tender document(s) on the website (for searching in the NIC site <https://www.etenders.gov.in>, kindly go to "Tender Search", option, select tender type and select 'Council of Scientific and Industrial Research', in organization tab and select NAL-Bengaluru-CSIR in department type. Thereafter, click on "Search", button to view all CSIR-NAL, Bengaluru tenders). Select the appropriate tender and fill them with all relevant information and submit the completed tender document online in the website as per the schedule given in the next page.
3. a. Global Tender Enquiry: Either the Indian Agent on behalf of the Foreign Principal or the Foreign Principal can bid directly in a tender but **not** both. However, the offer of the Indian Agent should also accompany the authorization letter from their principal. To maintain sanctity of tendering system, one Indian Agent **cannot** represent **two** different Foreign Principals in **one** tender.

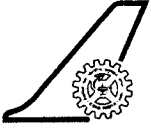


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- b. Open Tender Enquiry: Only Local Suppliers with prescribed local content as detailed in Department for Promotion of Industry and Internal Trade (DPIIT) Order No. P-45021/2/2017-PP (BE-II), dated 16th Sep, 2020, and subsequent orders issued by the Ministry of Finance, Government of India from time to time, are eligible for bidding. Bidders' must enclose the certificate declaring their local content of supplies as per our standard form.

Note: Kindly, refer to the first page of Notice Inviting Tender for tender type i.e. Open Tender Enquiry / Global Tender Enquiry and submit your bid accordingly.

4. Unsolicited / Conditional / Unsigned Quotations/Quotations received after the due date and time shall be summarily rejected. The Bidder should comply with the terms and conditions of the tender, failing which, their offer will be liable for rejection.
5. The bids' failing to comply with the following clauses will be summarily rejected.
- The Bidders' proposing to supply finished products directly/indirectly from vendors' of countries sharing the land border with India should submit a copy of registration done with DPIIT
 - If the products supplied are not from vendors of countries sharing land border with India, the Bidders' have to enclose a declaration to that effect.
6. As per Government of India procurement policies:
- The purchaser intends to give purchase preference to local supplies (preference to Make in India) in case the cost of procurement is up to Rs.50 (fifty) lakhs.
 - The procuring entity intends to give purchase preference to products/goods manufactured by Micro, Small and Medium Enterprises.
7. Bidders' are requested to refer to the instructions regarding Procurement Policies for "Make in India", issued by Ministry of Commerce and Industry, Department of Industrial Policy and promotion dated. 28-May-2018, and 4-Jun-2020 and guidelines as and when issued.
8. Kindly, note CSIR-NAL GST No.29AAATC2716R1ZB. And, the bidders' are requested to furnish their GST No. in their invoice failing which we will **not** be able to make timely payment.
9. Printed conditions, if any, submitted along with your quotation will not be binding on us.

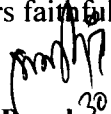


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10. The prospective bidders' are requested to refer to the Standard Terms and Conditions available on NAL website (www.nal.res.in) under the icon Tender-Purchase before formulating and submitting their bids'.
11. The Director, CSIR – National Aerospace Laboratories, Bengaluru, reserves the right to accept any or all the tenders either in part or in full or to split the order without assigning any reason(s) thereof.

Thanking You,

Yours faithfully


20/04/2024
Stores & Purchase Officer
For and on behalf of CSIR-NAL

Annual Maintenance Contract for maintaining various sub systems of CVI reactor with

Preventive Maintenance of Three Visits per quarter and breakdown maintenance as and when required for one year

Sl. No	Equipment	Activities
1.	CVI Process Chiller – 3.5 TR	<ul style="list-style-type: none"> i. Check Compressor oil level and top up with required oil. ii. Inspect the filter and solenoid valve condition and replace as required. iii. Check Refrigerant level and top up as required. iv. Acid wash of tube in shell heat exchanger. v. Checking water in gate valve and evaluate cooling efficiency
2.	Heat Exchanger (Alfa Laval heat exchanger MF-6)	<ul style="list-style-type: none"> i. Dismantling of heat exchanger ii. Removal of heat exchanger plates (hot circuit/cold circuit) and its thorough cleaning. iii. Reassemble and ensure leak tightness.
3.	FRP Scrubber Tank	<ul style="list-style-type: none"> i. Draining the scrubbed liquid. ii. Cleaning with Fresh water. iii. Removing the scrubbing column baffle plates, cleaning and reassembly. iv. Fill the scrubber with fresh water. v. Cleaning the whole ABS water line.
4.	FRP cooling Tower	<ul style="list-style-type: none"> i. Draining the cooling tower tank water. ii. Cleaning of all fill sheets. iii. Refill with water.
5.	CVI Reactor Vessel	<ul style="list-style-type: none"> i. Prepare buffer tank with water and acid to remove the scale in the vessel. ii. Start water cooling system and run water through the jacket of the vessel with the water having pH of 1-2 for 1-2 hours. iii. Drain the dirty water completely from buffer tank to effluent tank. iv. Run the cooling system with fresh water for 2 hours and drain the dirty water to the effluent tank. This step has to be repeated for 2-3 times. v. Operate the cooling system overnight with fresh water.
6.	Mechanical booster pumps 1 and 2.	<ul style="list-style-type: none"> i. Check oil level and efficiency of bearings, mechanical seal and condition of O-rings. ii. In the event of failure/breakdown, remove the pump from the vacuum line, dismantle the pump, replace the defective part i.e., mechanical seal, O-rings or Bearings, iii. Reassemble the booster pump in vacuum line and check for vacuum.

(Signature)
28/04/2024

7.	Vacuum Line	<ul style="list-style-type: none"> i. Wash the whole vacuum line from CVI reactor to Liquid Ring Pump including booster pumps with water for 3-4 hours. ii. Dismantle the whole vacuum line (6 inch line), clean the by-products still stuck in the inside of vacuum line. iii. Clean the diaphragm valves, Check the integrity of diaphragms, replace with new diaphragms if defective, if found usable grease the diaphragms and refit the same.
8.	Gas supply Manifold/ Gas Manipulation System	<ul style="list-style-type: none"> i. Hydrogen leak testing of all gas lines (Argon, L.P. Argon, Nitrogen, Hydrogen, Methane, Ammonia, Boron trichloride and Methyl Trichloro silane). ii. Hydrogen leak test of all gas lines in the gas control system. iii. Hydrogen leak test of all gas lines from gas cabinet to reactor entry point.
9.	Reactor Vessel	<ul style="list-style-type: none"> i. Disconnect all power connections, remove all sensors and store it safely for reassembly. ii. Completely dismantle the reactor vessel (Top dish, Bottom dish, lower stake, upper stake including 6 power feed throughs, heater assembly, graphite retort) iii. Check the integrity of silver brazing in all the power feed throughs and re braze if required. iv. Remove all deposits in reactor chamber by carefully removing the deposits. v. Replace the gas inlet assembly with a new one. vi. Check the condition of fibre insulation modules in the reactor vessel, replace with new modules if the installed/existing module is found to be devitrified and insulation performance is degraded. vii. Recondition of all the power feed throughs. viii. Reassemble the whole reactor vessel and checking the vacuum.
10.	Rebuilding/ Reconditioning of Graphite Furnace	<ul style="list-style-type: none"> i. Strip down the CVI reactor. ii. Power legs opening and reconditioning iii. Replace the failed elements, current transfer plate and rebuild the two zones of furnace. iv. Re assembly of heaters and CVI vessel.
11.	Rebuilding the After Burner	<ul style="list-style-type: none"> i. Dismantling of after burner assembly ii. Rebuilding of after burner assembly by replacing the cracked insulation boards
12.	Consumables required for this maintenance	Replacement of Lubricating Grease, Vacuum Gease, Vacuum oil for mechanical booster pumps, O-rings. Oil seals etc

Handwritten signature and date: 20/04/2024