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# INSTITUTE FOR PLASMA RESEARCH

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## MINOR FABRICATION WORKS ENQUIRY

Office Copy

ENQUIRY NO :IPR/MFW/22-23/136

Date : 07-06-2022

**Due Date : 22-06-2022 13:00 IST**

**Extended Due Date : 06-07-2022**

Please send your offer in sealed envelope specifying Inquiry No, Date & Due Date, ALONG WITH your credentials for the following items:

Important Note:

Please note that e-mail quotations are not acceptable however you may send your queries (if any) to **ranjana@ipr.res.in**

Please Ensure that your sealed quotation reaches this office not later than above mentioned due date and time.

Kindly go through the following document properly before Quoting which are available on the IPR web portal i.e., <http://www.ipr.res.in/documents/tenders.html/> attached here with.

1. Technical specification as enclosed.
2. Instruction to the bidders & terms and Condition (refer Form NO:**IPR-MFW-01-V1**)
3. Bidding format(refer Biddingformat MFW-Bid.pdf)

GST fro Goods and Services (IGST/CGST/SGST TAX BENEFITS): PLEASE REFER clause no:8 of Form No:**IPR-MFW-01-V1**

QUOTATION SHOULD BE ADDRESSED TO **RANJANA GANGRADEY** ONLY.

Sr.No.	Description	Quantity	Rate
1	Supply of High pressure oil free gas impulsion system as per the specifications	1	No.

### Free Issue Material

Sr.No.	Description	Quantity	Unit	Value
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Note : Please quote with complete technical details (Technical Compliance sheet and product data sheet)

Encl:As per attachment

Sd/-  
RANJANA GANGRADEY  
Scientific Officer-G

## **Tender/Specification Document for “High pressure oil free gas impulsion system”**

### **[1]. Introduction:**

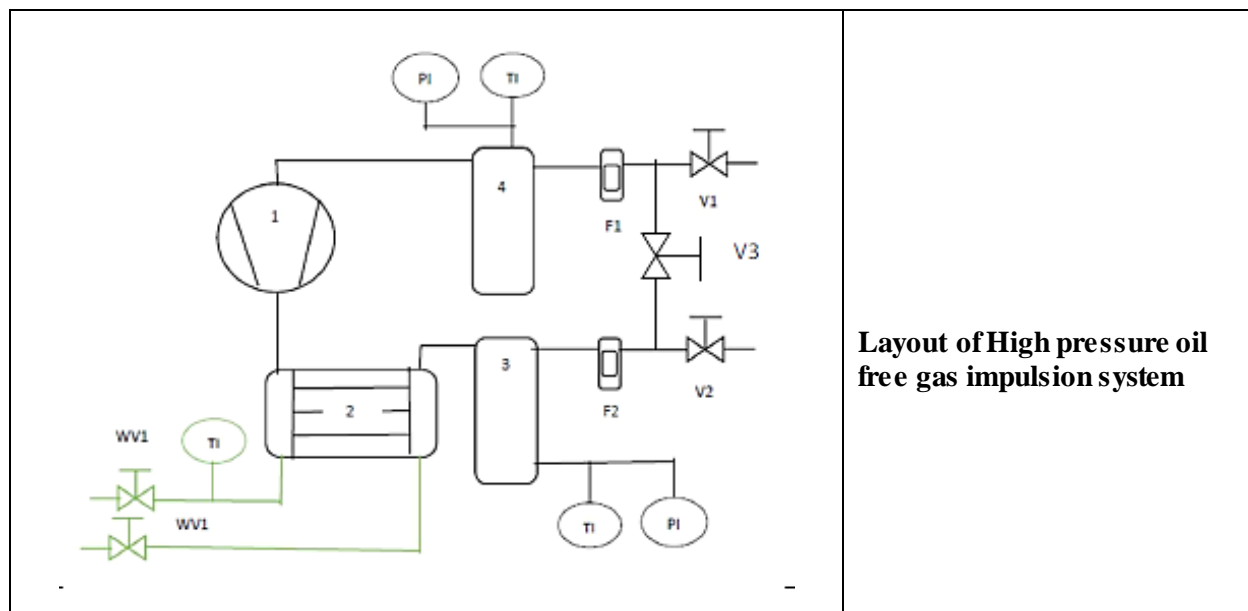
The tender for the fabrication, testing and supply of customized “High pressure oil free gas impulsion system” is mainly aimed for the fabrication of oil free Helium gas compressor, heat exchanger, storage tank, accumulator tank, skid and mounting, filter, P & ID, and tubing, fitting, and accessories. All the above components with required specifications and accessories provided by IPR should be fabricated as per the tender document. High pressure oil free gas impulsion system must be leak tested (soap-bubble test) by filling helium gas at 2 bar (gauge) pressure at the factory before supplying to IPR.

**Note: Vendor has to supply complete assembly as per the lay-out given in the specifications by arranging all the necessary tubing and fittings.**

### **[2]. Fabrication and supply of following components**

**Table 1: Fabrication components**

<b>Sr. No.#</b>	<b>Component name</b>	<b>Quantity required</b>
01	Oil Free Helium Gas Compressor	1
02	Heat Exchanger	1
03	Storage Tank	1
04	Accumulator Tank	1
05	Skid And Mounting	1
06	Filter	2
07	P & ID	1
08	Valves HSV 1/2 2 WAY	5
08	Tubing, Fitting, And Accessories	As per requirement



**Layout of High pressure oil free gas impulsion system**

**[3]. Specification/Compliance**

Sr.#	Particulars	Specification/Requirements	Vendor's response
01	Oil free gas compressor	<ul style="list-style-type: none"> <li>• Model: Oil free</li> <li>• Gas: Helium</li> <li>• Gas flow rate: 320 LPM (50Hz)</li> <li>• Power supply: AC 415V, 3Phase</li> <li>• Power consumption: 1500 Watt</li> <li>• Maximum pressure: 8 kgf/cm<sup>2</sup> ( 7.845 bar)</li> <li>•</li> </ul>	<b>Yes/ No</b>
02	Heat exchanger (PHE)	<ul style="list-style-type: none"> <li>• Model: Plate heat exchanger</li> <li>• MOC: SS 316/Copper</li> <li>• Heat load: 5 to 15 kW</li> <li>• Temperature range: 5°C to +100°C</li> <li>• Pressure range: 1 to 12 bar</li> <li>• Connection required: ½" NPT threads</li> <li>• No. of streams: 2 (Water, Helium)</li> </ul>	<b>Yes/ No</b>
03	Storage tank:	<ul style="list-style-type: none"> <li>• MOC: SS 304</li> <li>• Tank size: Drawing should be provided at time of commissioning</li> <li>• Tank pressure: Up to 12 bar</li> <li>• Tank Volume: 5-litres at Room temp / Pressure</li> <li>• Inlet Outlet Port: ½" NPT female thread ports</li> <li>• Inlet – outlet configuration: Drawing should be provided at time of commissioning</li> </ul>	<b>Yes/ No</b>
04	Accumulator tank	<ul style="list-style-type: none"> <li>• MOC: SS 304</li> </ul>	<b>Yes/ No</b>

		<ul style="list-style-type: none"> <li>• Tank size: Drawing should be provided at time of commissioning</li> <li>• Tank pressure: Up to 12 bar</li> <li>• Tank Volume: 5-litre Helium at STP</li> <li>• Inlet Outlet Port: ½” NPT female thread ports</li> <li>• Inlet – outlet configuration: Drawing should be provided at time of commissioning</li> </ul>	
05	Skid and mountings	<ul style="list-style-type: none"> <li>• Skid platform MOC: Mild Steel</li> <li>• Dimensions of platform: 1500mm (L) X 1000mm (H) X 1000mm (W)</li> <li>• Mounting sheet: 3mm MS plate</li> <li>• Mountings of components: Bolting with platform</li> <li>• PHE mounting: Use appropriate mounting to take care of elevation</li> <li>• Skid handle: Appropriate shape handle should be provided</li> <li>• Protection: All MS parts painted with rust free coating</li> </ul>	<b>Yes/ No</b>
06	Filter	<p>Dust filter Hermetic filter drier, Oil free applications</p> <p>Inlet &amp; outlet connection: ½” NPT</p> <p>Max. Working Pressure: 20 bar</p>	<b>Yes/ No</b>
07	P & ID	Final P & ID should be provided at the time of commissioning	<b>Yes/ No</b>
08	Valves	<p>Type: manual shut-off valve</p> <p>Size: ½” Flare type Connection</p> <p>Temperature range: 55 – 100°C</p> <p>Working range: <math>\Delta p = 1 - 12</math> bar</p> <p>Max. working pressure: 20 bar</p>	<b>Yes/ No</b>
09	Tubing, Fittings and Accessories	As per Table 2	<b>Yes/ No</b>
10	Warranty	<p>Warranty for 12 months after the acceptance testing at IPR.</p> <ul style="list-style-type: none"> <li>• Any defect on material and welding joints will have to be re-welded or repaired/replaced by the vendor. In case of repairing vendor can do the repairing at IPR or they may take the chamber at their factory and after necessary repairing and testing they can send back to IPR with no additional cost to IPR.</li> <li>• Provide a warranty certificate along with the supply, mentioning the above points.</li> </ul>	<b>Yes/ No</b>

**Table 2: Specifications (09): Tubing, Fittings and Accessories**

S. No.	Component between		Tube Size (Copper)	Ferrule based connections	End connection with components
	From	To			
1.	Compressor	PHE	½" tube	-	Compressor side appropriate joint/fittings PHE side - ½", ferrule with ½" NPT male threading
2.	PHE	Storage tank	½" tube	Orifice based ½" ferrule union	Storage tank - ½", ferrule with ½" NPT male threading-PHE side - ½", ferrule with ½" NPT male threading
3.	Storage tank	Filter	½" tube	Orifice based ½"	Storage tank ½" ferrule with ½" NPT male threading ½" ferrule-based gate valve to
4.	Filter	Gate valve	½" tube	ferrule union ½" ferrule-based gate valve	½" ferrule with ½" NPT male threading ½" ferrule-based gate valve
5.	Gate valve	Application	½" tube	ferrule union ½" ferrule-based gate valve	½" ferrule-based gate Valve ½" NPT male threading to application
6.	Accumulator	Compressor	½" tube	-	Compressor side appropriate joint/fittings Accumulator side - ½", ferrule with ½" NPT male threading
7.	Filter	Accumulator	½" tube	Orifice based ½"	Accumulator ½" ferrule with ½" NPT male threading ½" ferrule-based gate valve to
8.	Application	Gate valve	½" tube	ferrule union ½" ferrule-based gate valve	½" ferrule-based gate Valve ½" NPT male threading to application
9.	Water in to PHE	Gate valve	½" tube	-	Water inside Nozzle for ½" braided flexible tube Heat exchanger side ferrule with ½" NTP male threading
10.	Water out from PHE	Gate valve	½" tube	-	Heat exchanger side ferrule with ½" NTP male threading Water

					outside Nozzle for ½” braided flexible tube
11.	High pressure line (To Application)	Gate valve	½” tube	ferrule union ½” ferrule-based gate valve	½” ferrule-based gate Valve ½” NPT male threading to application
11.	Low pressure line (From Application)	Gate valve	½” tube	ferrule union ½” ferrule-based gate valve	½” ferrule-based gate Valve ½” NPT male threading to application
Other fittings					
12.	On storage & Accumulator tank			Relief valve having ½” NPT male threading up to 12 bar settable	
13.	Temperature Sensor (PT-100)			At locations showed in P&ID.	
<b>Note:</b> Material of all the tubes mentioned in tables are high grade copper.					
<b>Note:</b> All the fittings are compatible to copper tube having pressure rating up to 12 bar					

**[4]. Delivery:**

On or before 3 months after the purchase order date.

**[5]. Factory testing**

Vendor must carry out soap bubble test by filling helium gas at the pressure of 2 bar (gauge) at factory for all the tightened/welded joints. Test photos to be submitted to IPR before supply.

**[6]. List of documents to be submitted**

Sr. No.#	Documents required	Submission timeline	Vendor’s Action
01	Fabrication drawings	Before fabrication start	To be submitted to IPR for review.
03	Factory test photos	After the fabrication	To be submitted to IPR for review and dispatch clearance.
02	Material test certificates	After material receipt and finalizing the material for fabrication	To be submitted to IPR along with supply items.

**[7]. Acceptance:**

- Final acceptance will be provided after the performance testing of “High pressure oil free gas impulsion system” at IPR. It involves helium leak testing in the sniffer mode and measurement of the operational parameters like temperature and pressure as per the specifications.
- IPR will carry out helium leak testing (with helium leak detector) and the acceptable leak rate for all the tightened/weld joints will be  $\leq 1E-6$  mbar-l/s (sniffer mode- high pressure test).



(This need to be printed in Bidders letter head)

1. Please quote with complete technical details along with technical compliance sheet.
2. Quotation should be submitted in the format given below, else IPR shall not consider the offer by the vendor.

**NAME OF PARTY :** \_\_\_\_\_

**ENQUIRY NO:** \_\_\_\_\_

**QUOTATION No. & DATE :** \_\_\_\_\_

Currency of Quotation: **Indian Rupees**

Sr. No.	Item Description	HSN/SAC Code	Quantity	Unit Rate (Basic)	Packaging & forwarding (P&F)	Applicable GST	Rate (incl P&F and GST)	Total Value
			a	b	c	d	e = b + c + d	f = a * e
1								
2								
3								
4								
5								
6								

Sr. No.	Particular	Remarks
I.	Ex-works / FOR Destination	
II.	Freight	
III.	Insurance	
IV.	Delivery Period	
V.	Payment (IPR terms will apply)	
VI.	Guarantee / Warrantee	
VII.	Validity Period	
VIII.	Discount (if any)	
IX.	Remarks	

Place: Authority Signatory

Date: Company Seal

**Note:**

1. Bidder should submit the copy of GSTIN / ARN Certificate along with the offer
2. Bidder should specify the SUPPLY and SERVICE rates/ charges separately wherever applicable



**Form No: IPR-MFW-01.V1**

### INSTRUCTIONS TO BIDDERS AND TERMS AND CONDITIONS

1. The Quotation and any order resulting from this enquiry shall be governed by our Conditions of Work Order and Contractor quoting this enquiry shall be deemed to have read and understood the same completely.
2. Where counter terms and conditions have been offered by the Tenderer, the same shall not be deemed to have been accepted by IPR unless our specific written acceptance thereof is obtained.
3. **Quotation:** Quotation should be submitted in the prescribed QUOTATION FORMAT attached with this Enquiry and the same should be submitted in a sealed envelope super-scribing the same with our enquiry No., date, due date and brief description of item on or before the due date. Late/delayed/incomplete/unsigned quotations will not be considered. Envelopes received without Enquiry number, date, due date and brief description of item may be rejected. The quoted prices should be firm for a period of 90 days from due date for placing order. IPR is not bound to accept lowest rate/s. IPR reserves the right to place on one or more parties. The scope of supply includes insurance by the Contractor.
4. **Specifications:** Goods should be offered strictly confirming to our specifications/drawings. Deviation, if any, should be clearly indicated by the contractor in their quotation. The Tenderer should also indicate the Make/Type number of the goods offered and catalogues, technical literature and samples, wherever necessary should accompany the quotation. Clarification/s on drawings should be obtained before submitting quotation.
5. **Terms of Prices:** Quotation should be submitted on door delivery basis without extra charge wherever possible. For quotations on Ex-Works, Ex-godown basis the approximate packing and forwarding charges should be indicated by the contractor. In the case of local contractors, the goods are to be delivered at our stores free of charge.
- 5.1 In respect of tenders on Ex-works basis, in case the tenderer has not mentioned in the offer packing, forwarding and transportation charges for safe delivery up to Purchaser's site, 2% of the price quoted towards packing (in respect of both local and outstation firms), 1% of the basic price quoted towards safe delivery charges in respect of local tenderer and 3% of the basic price quoted towards safe delivery charges in respect of outstation firm will be added for comparison of offers on safe door delivery at Purchaser's site.
- 5.2 Prices are required to be quoted according to the units indicated in the tender form/Enquiry. When Quotations are given in terms of units other than those specified in the tender form, relationship between the two sets of units must be furnished
6. Tender should be free from Correction and Erasures. Corrections, if any, must be attested. All amounts shall be indicated both in words as well as in figures. Where there is difference between amounts quoted in words and figures, amount quoted in words shall prevail. Unsigned quotations will summarily be rejected. If there is a discrepancy between the unit price and total price, unit price shall prevail.
7. IPR shall be under no obligation to accept the lowest or any tender and reserves the right of acceptance of the whole or any part of the tender or portion of the quantity offered and the tenderers shall supply the same at the rate quoted.
8. **Goods & Services Tax (GST):** The details of Taxes/GST and other levies legally applicable and intended to be claimed should be clearly indicated in the tender. Where this is not done, no claim on these accounts would be admissible later.

**a) GST for Goods (IGST/CGST/SGST TAX BENEFITS):**

IPR is entitled to avail tax benefit as per the following notifications issued by Ministry of Finance, Department of Revenue, Government of India:

(1) No: 47/2017-INTEGRATED TAX (RATE) DATED 14/11/17 for IGST

(2) No: 45/2017-CENTRAL TAX (RATE) DATED 14/11/17 for CGST

And,

IPR is entitled to avail tax benefit as per the following notifications issued by Finance Department, Government of Gujarat:

(1) No. 45/2017-STATE TAX (RATE) DATED 15/11/17 for SGST

As per above notifications IPR will bear only 5% IGST for procurement of goods from outside Gujarat & 2.5% CGST and 2.5% SGST (total 5%) for procurement of goods within Gujarat. Vendors are required to charge tax as per these notifications while quoting/supplying the goods. Deviations, (if any) should be clearly mentioned in the quotation/offer.

**Please specify the HSN codes while quoting.**

**b) GST for Services:**

As applicable. **Specify the SAC codes wherever services are involved.**

9. **Delivery Date:** Delivery period is essence of the Contract. Contractor must indicate the firm delivery date by which the goods will be dispatched or delivered by them from the date of our order. Delivery period shall be clearly



# प्लाज़्मा अनुसंधान संस्थान

) भाट, इन्दौरा पुल के पास, गांधीनगर - 382428, गुजरात (भारत)

## Institute for Plasma Research

Bhat, Near Indira Bridge, Gandhinagar - 382428, Gujarat (INDIA)

Phone: +91-79-23962000 Fax: +91-79-23962277 Website: www.ipr.res.in



- indicated against each item separately.
10. **Price/ Purchase Preference:** Purchase/Price preference to industries will be given as per the policy of the Government of India in force at the time of evaluation provided their offer is in compliance with the conditions of the policy.
  11. **Liquidated Damages:** The successful Vendor/Bidder should pay liquidated damages @ ½% (half percent) of the total work order value for the delay of each week in the scheduled date of completion of the work envisaged in the Work Order subject to a maximum of 5% (Five percent) of the total Work Order value.
  12. **Inspection:** Goods on its arrival at IPR will be inspected by Stores, and his decision in the matter will be final. However, where the items are required to be inspected at the Contractors Premises, Contractor has to give advance notice regarding readiness of the Goods to enable us to depute our representative for inspection.
  13. **Payment:** Payment will be arranged for accepted goods only within 30 days from the date of receipt of goods at IPR and bills in our accounts section, completed in all respects.
  14. No correspondence will be entertained within 30 days from the date of receipt of good and bills, whichever is later.
  15. **Guarantee:** The Stores offered should be guaranteed for a minimum period of twelve months, from that date of acceptance, against defective Goods, design, workmanship, operation or manufacture. For defects noticed and communicated during the Guarantee period, replacement/rectification should be arranged free of cost within a reasonable period of such notifications. In case where our specifications call for a guarantee period more than 12 months specifically, then such a period shall apply.
  16. **Performance Bank Guarantee:** If demanded by IPR, the successful bidder will have to furnish Performance Bank Guarantee for 10% of the order value (basic price) from a Nationalized/Scheduled Bank/State Bank of India, valid throughout the Guarantee/Warranty period. The scheduled banks approved by IPR are Axis Bank, HDFC Bank, ICICI Bank and IDBI Bank. Bank Guarantees submitted other than from banks approved by IPR will not be accepted.
  17. **Security Deposit:** If demanded the successful Bidder will have to furnish to the Purchaser an interest free security deposit for 10% (Ten percent) of the order value in the form of Bank Guarantee of an equivalent amount from a nationalized/ scheduled Bank/State Bank of India within 15 days from the date of work order and the said Guarantee should be valid till the goods are accepted by IPR. The scheduled banks approved by IPR are Axis Bank, HDFC Bank, ICICI Bank and IDBI Bank. Bank Guarantees submitted other than from banks approved by IPR will not be accepted. The Security deposit shall be forfeited in case the selected Bidder does not start the work within the time limit specified or fail to complete the work within the stipulated delivery period or fail to comply with any of the terms and conditions in the work order. On successful completion of scope of work and its acceptance by IPR, Contractor should send a letter requesting return of the original BG.
  18. The Contractor shall at all times indemnify the purchase against all claims which may be made in respect of the stores for infringement of any right protected by Patent Registration of design or Trade Mark and shall take all risk of accidents or damage, which may cause failure of supply from whatever cause arising and the entire responsibility for sufficiency of all means used by him for the fulfilment of the contract.
  19. **Free Issue Material (FIM):** Successful tenderer will have to arrange insurance showing beneficiary as "Institute for Plasma Research" at their risk and cost towards adequate security for the materials/property provided/issued by the Purchaser as Free Issue Material for the due execution of the contract.
  20. The Director, IPR reserves the right to accept or reject any quotations fully or partly or to cancel the enquiry without assigning any reason.
  21. **Jurisdiction:** The contract shall be governed by the Laws of India for the time being in force. The Courts of Gandhinagar only shall have jurisdiction to deal with and decide any legal or dispute arising out of this Contract.