



# INSTITUTE OF NANO SCIENCE AND TECHNOLOGY, MOHALI

(An autonomous Research Institute of Department of Science and Technology,  
Government of India)

Habitat Centre, Sec-64, Phase X, Mohali – 160062, PUNJAB  
Phone No: 0172 – 2210056/57/73/75, Fax No: 0172 – 2211074  
Website: [www.inst.ac.in](http://www.inst.ac.in)

F. No. INST/12(7)/2019-Pur

Date: 30<sup>th</sup> August, 2019

To

## **NOTICE INVITING TENDER**

Dear Sir,

Sealed Quotations are invited on behalf of Director, INST Mohali for the purchase of **Pilot Scale System for Extraction of Sodium Carbonate from Flue Gas** so as to reach latest by **24<sup>th</sup> September, 2019** on or before 2.00 pm. The Quotations will be opened on the same day at 3.00 pm in the presence of tenderers, if any:

**Before quoting, please read the instructions and technical specifications carefully as enclosed.**

**Note: Please attach the copies of previous supply order to any Government Institutes/ autonomous bodies/ PSU, if any, with the quotation and provide the contact person and his contact Nos.**

Tender is also available on Institute website: [www.inst.ac.in](http://www.inst.ac.in) or CPPP website: [www.eprocure.gov.in](http://www.eprocure.gov.in).

Yours faithfully

Sd/-  
Head of Office



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## INSTRUCTIONS

- Inquiry, if any, may be sent by Courier or Speed Post. INST will not be liable for any kind of postal delay.
- The Quotation Should be addressed to the Director INST, Mohali invariably giving on the envelop Quotation for \_\_\_\_\_, Reference No. With date and due date with time.
- The Quantity mentioned in this inquiry shall be deemed to be only approximate and will not in any manner be binding on the Institute.
- The quotation should be enclosed in a sealed envelope.
- Firms will quote separately for each article.
- The rates offered should be FOR Mohali in case of firms situated outside Chandigarh and free delivery at the Institute premises in case of local firms.
- GST: The Institute is not exempted from the payment of GST. The rate (i.e., percentage of taxes applicable should be clearly indicated, wherever chargeable.
- In case of Ex-godown terms the amount of packaging forwarding freight etc. should clearly be indicated by percentage or lump sum amount. Current rate of GST must be mentioned. The institute is exempted from Customs and Excise Duty.
- The delivery period should be specifically stated. Ex-Stock and earlier delivery may be preferred.
- The firms are requested to give detailed description and specifications together with the detailed drawings, printed leaflets and literature of the Article quoted.
- The name of the manufacturers and country of manufacture should also invariably be stated. In the absence of these particulars the quotation is liable for rejection.
- Quotation should have minimum validity of 120 days from the date of opening.
- The rates quoted should be for each item separately otherwise your quotation is liable to be ignored.
- Late or delayed quotation will not be accepted.
- Director has the right to reject to the quotations and to split up the requirements or change any or all the above conditions without assigning any reason.



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## NOTICE INVITING TENDER

INST invites tender from the reputed manufacturers or their authorized dealers so as to reach this office on or before scheduled date and time for the instrument, as per specifications given in the Annexure attached to the Tender form. All offers should be made in English and should be written in both figures and words. Tender forms can be downloaded from the website ([www.inst.ac.in](http://www.inst.ac.in)) of the Institute.

The bidders are requested to read the tender document carefully and ensure compliance with all specifications/instructions herein. Non-compliance with specifications/instructions in this document may disqualify the bidders from the tender exercise. The Director, INST reserves the right to select the item (in single or multiple units) or to reject any quotation wholly or partly without assigning any reason. Incomplete tenders, amendments and additions to tender after opening or late tenders are liable to be ignored and rejected.

## EQUIPMENTS LIST

S. No.	Item Description	Qty	Tender Submission Date and Time	Tender Opening Date and Time	Tender Fee	EMD
1	Pilot Scale System for Extraction of Sodium Carbonate from Flue Gas	01 No	24/09/2019 upto 2.00PM	24/09/2019 at 3.00PM	Rs.590/-	Rs 20,000/-

**Note:** The Institute shall not be responsible for any postal delay about non-receipt / non delivery of the bids or due to wrong addressee.

### TERMS AND CONDITIONS

Important Conditions of the tender to be abide by the tenderer

- Due date:** The tender has to be submitted before the due date. The offers received after the due date and time will not be considered.
- Preparation of Bids:** The offer/bid should be submitted in single bid system (i.e.) Technical bid cum financial bid. **The Quotations should be valid for 120 days from the due date.** The Quotations duly sealed and super scribed on the envelope with the reference No. and due date, should be addressed to “**The Director, Institute of Nano Science and Technology, Habitat Centre, Sector 64, Phase –X, Mohali, 160062, Punjab**” so as to reach on or before the due date.
- Delivery of the tender:** The tender shall be sent to the addressee given in para 2 (above) either by post or by courier so as to reach our office before the due date specified in our Schedule. The offer/bid can also be dropped in the tender box on or before the due date specified in the schedule. The tender box is kept in Foyer area of INST.
- Opening of the tender:** The offer/bid will be opened by a committee duly constituted for this purpose. The bidders if interested may participate on the tender opening Date and Time. The bidder should produce authorization letter from their company to participate in the tender opening. Only one representative will be allowed to participate in the tender opening.
- Acceptance/Rejection of bids:** The INST reserves the right to reject any or all offers without assigning any reason.
- EMD:** Tender fee/EMD is to be obtained from the bidders except those who are registered with the Central Purchase Organisation, National Small Industries Corporation (NSIC) or the concerned Ministry or Department. The tenderer should submit Tender Fee/EMD amount as per tender ref. no. through NEFT/RTGS in INST Account. Account Details are as follows:
  - Name of Beneficiary: Institute of Nano Science and Technology (INST)



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- b. Account No. 2452201001102
- c. Name of Bank: Canara Bank, Sector 34, Chandigarh
- d. IFS Code: CNRB0002452
- e. MICR Code: 160015003
- f. Swift Code: CNRBINBBFFC

The details of transaction for EMD viz. Name of bidder firm, Tender Description, Transaction ID/No. of Transfer, Transaction date, Amount of Transaction, Name of Bank, Address of Bank shall be furnished by the tenderer on their letterhead separately along with their tender.

7. **Refund of EMD:** Bid securities of the unsuccessful bidders shall be returned to them at the earliest after expiry of the final bid validity and latest on or before the 30th day after the award of the contract. In case of successful Tenderer, it will be retained till the successful and complete installation of the equipment.
8. **Performance Security:** The supplier shall be required to submit the performance security in the form of irrevocable bank guarantee issued by any Indian Nationalized Bank for an amount which is equal to the 10% of Purchase value at the time of the installation of the equipment covering warranty period of the equipment and should be kept valid for a period of 60 days beyond the date of completion of warranty period.
9. **REASONABILITY OF PRICES :**  
Please quote best minimum prices applicable for a premier Research Institution, **leaving no scope for any further negotiations on prices.** **The quoting party should give a certificate to the effect that** the quoted prices are the minimum and they have not quoted the same item on lesser rates than those being offered to INST to any other customer nor they will do so till the validity of offer or execution of the purchase order, whichever is later. We request you to fill the price reasonability certificate format in the enclosed file (Annexure "1")  
The party must give details of identical or similar equipment, if any, supplied to any CSIR labs/DBT Institutes during last three years along with the final price paid and Performance certificate from them.
10. **Force Majeure:** The Supplier shall not be liable for forfeiture of its performance security, liquidated damages or termination for default, if and to the extent that, it's delay in performance or other failure to perform its obligations under the Contract is the result of an event of Force Majeure.
  - For purposes of this Clause, "Force Majeure" means an event beyond the control of the Supplier and not involving the Supplier's fault or negligence and not foreseeable. Such events may include, but are not limited to, acts of the Purchaser either in its sovereign or contractual capacity, wars or revolutions, fires, floods, epidemics, quarantine restrictions and freight embargoes.
  - If a Force Majeure situation arises, the Supplier shall promptly notify the Purchaser in writing of such conditions and the cause thereof. Unless otherwise directed by the Purchaser in writing, the Supplier shall continue to perform its obligations under the Contract as far as is reasonably practical, and shall seek all reasonable alternative means for performance not prevented by the Force Majeure event.
11. **Risk Purchase Clause:** In event of failure of supply of the item/equipment within the stipulated delivery schedule, the purchaser has all the right to purchase the item/equipment from the other source on the total risk of the supplier under risk purchase clause.
12. **Packing Instructions:** Each package will be marked on three sides with proper paint/indelible ink, the following:
  - i. Item Nomenclature
  - ii. Order/Contract No.



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- iii. Country of Origin of Goods
    - iv. Supplier's Name and Address
    - v. Consignee details
    - vi. Packing list reference number
  13. **Delivery of Goods:**  
Delivery should be given at **Institute of Nano Science and Technology, Habitat Centre, Sector - 64, Phase 10, Mohali** within a maximum of one month's time from the date of placement of purchase order.
  14. **Delayed delivery:** If the delivery is not made within the due date for any reason, INST will have the right to impose penalty @ 0.5% per week and the maximum deduction is 10% of the contract value / price.
  15. **Prices:** The price should be quoted in net per unit (after breakup) and must include all packing and delivery charges. The offer/bid should be exclusive of taxes and duties, which will be paid by the purchaser as applicable. However the percentage of taxes & duties shall be clearly indicated. The price should be quoted without custom duty and excise duty, since INST is exempted from payment of Excise Duty and is eligible for concessional rate of custom duty. Necessary certificate will be issued on demand. **(Please refer Annexure – 2 for the price to be quoted).**
  16. **Notices:** For the purpose of all notices, the following shall be the address of the Purchaser and Supplier.
    - i. **Purchaser:** The Director,  
Institute of Nano Science and Technology,  
Habitat Centre, Sector – 64, Phase X, Mohali – 160064.
    - ii. **Supplier:** (To be filled in by the supplier)  
.....  
.....  
.....
  17. **Resolution of Disputes:** The dispute resolution mechanism to be applied pursuant shall be as follows:
    - i. In case of Dispute or difference arising between the Purchaser and the supplier relating to any matter arising out of or connected with this contract, such disputes or difference shall be settled in accordance with the Indian Arbitration & Conciliation Act, 1996, the rules there under and any statutory modifications or re-enactments thereof shall apply to the arbitration proceedings. The dispute shall be referred to the Director, Institute of Nano Science and Technology (INST) Mohali and if he is unable or unwilling to act, to some other person appointed by him willing to act as such Arbitrator. The award of the arbitrator so appointed shall be final, conclusive and binding on all parties to this order.
  18. **Applicable Law:** The place of jurisdiction would be Mohali (Punjab) INDIA.
  19. **Right to Use Defective Goods**  
If after delivery, acceptance and installation and within the guarantee and warranty period, the operation or use of the goods proves to be unsatisfactory, the Purchaser shall have the right to continue to operate or use such goods until rectifications of defects, errors or omissions by repair or by partial or complete replacement is made without interfering with the Purchaser's operation.
  20. **Training**  
The Supplier is required to train the designated Purchaser's technical and end user personnel to enable them to effectively operate the total equipment.



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## 21. **Installation & Demonstration**

The supplier is required to do the installation and demonstration of the equipment within one month of the arrival of materials at the INST site of installation, otherwise the penalty clause will be the same as per the supply of materials.

## 22. **Warranty:** Three Years Warranty shall have to be provided by the firm. The Warranty should be comprehensive on site.

**Note: If the OEM warranty is for 12 Months, additional extended warranty of two years should be quoted separately with or without price.**

## 23. **AMC:** Annual Maintenance Contract (AMC)/Comprehensive Maintenance Contract (CMC) up to next five years after warranty period is over should be quoted separately.

## 24. **Taxes and Duties**

Suppliers shall be entirely responsible for all taxes, duties, license fees, octroi, road permits, etc., incurred until delivery of the contracted Goods to the Purchaser. However, GST in respect of the transaction between the Purchaser and the Supplier shall be payable extra, if so stipulated in the order.

## 25. **Payment:** 100% payment shall be made by the Purchaser after delivery, inspection, successful installation, commissioning and acceptance of the equipment at INST in good condition and to the entire satisfaction of the Purchaser and on production of unconditional performance bank guarantee as specified in Clause 8 of tender terms and conditions.

## 26. **User list:** Brochure detailing technical specifications and performance, list of industrial and educational establishments where the items enquired have been supplied must be provided.

## 27. **Manuals and Drawings**

- Before the goods and equipments are taken over by the Purchaser, the Supplier shall supply operation and maintenance manuals. These shall be in such details as will enable the Purchaser to operate, maintain, adjust and repair all parts of the works as stated in the specifications.
- The Manuals shall be in the ruling language (English) in such form and numbers as stated in the contract.
- Unless and otherwise agreed, the goods equipment shall not be considered to be completed for the purposes of taking over until such manuals and drawing have been supplied to the Purchaser.

## 28. **Site Preparation:** The supplier shall inform to the Institute about the site preparation, if any, needed for the installation of equipment, immediately after the receipt of the purchase order. The supplier must provide complete details regarding space and all the other infrastructural requirements needed for the equipment, which the Institute should arrange before the arrival of the equipment to ensure its timely installation and smooth operation thereafter.

The supplier shall visit the Institute and see the site where the equipment is to be installed and may offer his advice and render assistance to the Institute in the preparation of the site and other pre-installation requirements.

## 29. **Shifting:** After 1-2 years once our new building is ready, the supplier has to shift and reinstall the instrument free of cost.

## 30. **Acknowledgement:** It is hereby acknowledged that we have gone through all the conditions mentioned above and we agree to abide by them.

SIGNATURE OF TENDERER  
ALONG WITH SEAL OF THE COMPANY WITH DATE



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## BID PARTICULARS

1. Name of the Supplier :
2. Address of the Supplier :
3. Availability of demonstration of equipment : Yes / No
4. Tender cost enclosed: : Yes/No if yes
5. Online EMD submission information enclosed : Yes / No if Yes

Transaction ID/No. of Transfer\_\_\_\_\_

Transaction date: \_\_\_\_\_

Amount of Transaction\_\_\_\_\_

Name of Bank\_\_\_\_\_

Address of Bank\_\_\_\_\_

6. Name and address of the Officer/contact person to whom all references shall be made regarding this tender enquiry

Name:

Address:

Ph:

Fax:

Mobile:

Email:

Web:





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**Compliance statement for the tender specifications**

Tender Ref No.: **INST/12(7)/2019-Pur**

S.No.	Check list of documents/Undertakings	Yes/No	Remarks (give explanation if the answer is No)
1.	Is EMD details attached? (if applicable)		
2.	Is the bidder original equipment manufacturer (OEM)/authorised dealer?		
3.	If authorised dealer, recent dated certificate to this effect from OEM, attached or not?		
4.	Undertaking from OEM regarding technical support & extended warranty period		
5.	Validity of 180 days or not?		
6.	Price Reasonability Certificate enclosed as per format??		
7.	Undertaking from bidder regarding acceptance of tender terms & conditions		
8.	Whether list of reputed users (along with telephone numbers of contact persons) for the past three years specific to the instrument attached?		
9.	Does the instrument comply with all the specifications detailed? Attach a separate sheet showing compliance with the specifications and explanations thereto if the equipment varies from the requested specifications.		
10.	Whether free Installation, Commissioning and Application Training offered?		
11.	Whether comprehensive onsite warranty offered?		
12.	Whether Annual maintenance after expiry of comprehensive onsite warranty quoted separately?		
13.	Whether free of cost shifting of instrument from transit campus to main campus offered?		





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## Annexure – 1

### PRICE REASONABILITY CERTIFICATE

This is to certify that we have offered the maximum possible discount to you in our Quotation No. \_\_\_\_\_ dated \_\_\_\_\_ for (Value Rs.) \_\_\_\_\_.

We would like to certify that the quoted price are the minimum and we have not quoted the same item on lesser rates than those being offered to INST to any other customer nor we will do so till the validity of offer or execution of purchase order, whichever is later.

Seal and Signature of the tenderer



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## Annexure - 2

Name of Equipment with Model No: \_\_\_\_\_

Name & Address of Manufacturer: \_\_\_\_\_

### **Price Quoted**

#### **A. For Indigenous Equipment**

- I. Cost of equipment (Rs.) \_\_\_\_\_
- II. GST (Rs.) \_\_\_\_\_
- III. Any other charges (Rs.) \_\_\_\_\_
- IV. Total cost of equipment (in Rs.) F.O.R, INST, Mohali \_\_\_\_\_

#### **B. For Imported Equipment**

- I. Cost of equipment (In Foreign Currency) \_\_\_\_\_
- II. Packing and Forwarding \_\_\_\_\_
- III. FOB/FCA Price \_\_\_\_\_
- IV. Freight charges upto Delhi Airport \_\_\_\_\_
- V. Insurance (110% of the cost of the equipment) \_\_\_\_\_
- VI. CIF/CIP upto Delhi Airport \_\_\_\_\_

Signature of Tenderer with date and seal



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## **Pilot Scale System for Extraction of Sodium carbonate from Flue Gas**

The specification of the above System is as follow:

**1-Heavy duty Blower unit** preferably Teflon/epoxy coated on all the internal gas contact points for flue gas continuous suction from the chimney. Motor capacity- 4 HP. Inner fan should be Teflon/epoxy coated to with stand high temperature and safeguard from flue gas. Blower should be leak proof to flue gas and should have suitable filter attached at outlet. Blower body should be MS powder coated with rubber feet. **1 No.**

**2-Variable frequency drive:-VFD** should be reputed make like Siemens/equivalent etc with digital display and variables speeds to control the flow of blower unit. **1No.**

**3-Teflon pipe/hose** of 3 meters length and suitable connecting flange size to connect with one end to chimney and other end to the blower unit for continuous sampling/extraction of the flue gas with all suitable fittings/clamps which can with stand high temperature of up to 200 Deg C. **1 No.**

**4-Flow meter:-TMFC/Rota meter** with flow regulator to be fitted on line to the main hose after the blower unit. Range 0.1 to 100 lpm. It should be compatible to the flue gas with high temperature to the range of 200 Deg C max. There should be gas sampling point/port after the flow meter to enable the user to monitor %age of flue gas entering to the first solvent vessel, second solvent vessel, third solvent vessel and also the last tank exhaust points with the help of external portable flue gas analyzer/monitor to record the results for the all gases at every stage in the vessel. **3Nos.**

**5-Solvent Reaction Vessels:-** MOC-SS 304,3mm thickness sheet, capacity-500 liters with Teflon coating of 40-50 micron compatible to the acidic/corrosive material holding in vessel. Vessel should be fitted with Gas transfer hose pipe of silicone/Nylon with Teflon nozzle. Flue gas to be dissolved in these vessels with Teflon loop sparger fitted on the top lid of vessel at gas in point. Another nozzle to be fitted for solvent dosing to the vessel after each batch harvesting. Solvent reaction Vessel bottom should be fitted with a drain valve of Teflon with silicone/Nylon hose pipe from first floor down to the ground floor up to the collection tank at the ground floor. Another pipe hose from ground floor placed solvent tank to the main vessel on to the first floor through Teflon coated head centrifugal pump of ¼ HP capacity for dosing of solvent to reaction vessel.SRV should be fitted with three legs of SS with SS disc feet for its stable positioning on the floor.All vessels should be fixed with gas sampling points on the exit points on hose of each vessel for time to time sampling of flue gas with a portable gas monitor to record the results for all the gases at every stage of scrubbing in the vessels. **3 Nos.**

**6-Solvent dosing tank-MOC –SS304,** 3 mm thickness sheet, capacity 500 liters, with Teflon coating of 40-50 micron compatible to the corrosive solvent holding in vessel connected to the dosing pump with Teflon coated pump head compatible with 10% acidic material at the ground



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floor near the collection vessel. Vessels should be fixed with the lockable wheels at the bottom on its all legs for easy handling of the tank. **3 Nos.**

**7-Solvent collection vessels-**MOC SS 304,3 mm thickness sheet capacity 500 liters, with Teflon coating of 40-50 micron compatible to the corrosive material holding in vessel connected with the main reaction vessel at the first floor with a silicone/nylon hose pipe for the solvent collection. SCV should be fitted with Teflon on/off valve on its lid where silicone hose is connected for receiving the material after every batch from the SRV placed at the first floor. Vessels should be fixed with the lockable wheels at the bottom on its all legs for easy handling of the tank. SCV should also be fitted with inbuilt heaters 3Nos of **2 KW each, total 6 KW** capacity at the bottom of the vessel externally. Each SCV should be provided with a glass viewing window with external graduating marking to know the level of liquid inside the vessel during its crystallization work through the tank during the in all the SCV heating process. Temperature indicator digital type and controller with sensor to control the temperature range 50 Deg C to 300 Deg C. All SCV vessels will be having independent temperature indication and control units. Temperature sensors will also be Teflon coated to avoid any corrosion on sensors body. Heater should not to be in contact to the solvent in the vessels. Vessels should be provided with the drain valve of 1” size of Teflon/PP/nylon at the bottom to take out the crystals out. Suitable size calcium carbonate silicone scrapper to be provided with each vessel. **3 Nos.**

**8- Spare Solvent Collection Vessels:-**Three spare SCV fitted with each 12KW heater and nozzles for solvent collection and one point for solvent dosing and temperature indicator digital type and controller with sensor to control the temperature range 50 Deg C to 300 Deg C. All SCV vessels will be having independent temperature indication and control units. Temperature sensors will also be Teflon coated to avoid any corrosion on sensors body. Heater should not to be in contact to the solvent in the vessels. **6 Nos.**

**9- pH Meter :-** pH meter of the range 0-14 (with accuracy  $\pm 0.05$ ) to be installed in each of three solvent reaction vessels to monitor the pH of each solvents. pH meter as well as the probe should be compatible with the wide temperature range 0 Deg C to 100 Deg C. There should be an arrangement to calibrate the pH meter, data login unit with inbuilt data storage memory for all three tanks. The data should be transported to PC/Laptop. **6 Nos.**

**10- Flue Gas flow booster pumps:-**There should be a small gas flow booster pump at the out let of the first and second solvent vessel to blow through the flue gas with the little pressure to the next vessel for its faster dissolution in the solvent. **3Nos.**

**11-PVC drum:** High quality PVC/Teflon coated 500L drum with cover **2Nos.**

**12- Steam Generator/Electric Boiler:-** Power consumption 12KW, steam capacity, output 20kg/hr rating steam, SS304 shell for steam generation with the auto level sensor, safety valves, solenoids valves, having glass wooled aluminum jacket for the boiler shell. **1No**