

**INDIAN ASSOCIATION FOR THE CULTIVATION OF SCIENCE  
2A & 2B, Raja S.C.Mullick Road, Jadavpur, Kolkata-700032**

**Tender Notice No.IC/AM/14/26 dated 18.06.2014**

Sealed tender in two bids system (technical bid and price bid) is invited from bonafied, resourceful, and eligible manufacturer/exclusive distributor/vendors for **Inert Atmosphere Glove Box**.

Part-I (Technical Bid) of the tender should contain technical specifications in detail as well as commercial terms and conditions. Part-II (Price Bid) should clearly indicate group-wise price as mentioned in the technical bid. The Technical Bid and Price Bid are to be submitted in separately sealed envelopes, distinctly marked accordingly and both to be put inside another envelop, that should be sealed and superscribed with tender notice no. and due date. The bidders may submit bids duly signed in their own letterheads.

Completed tender bids should reach the office of **Department of Inorganic Chemistry, Indian Association for the Cultivation of Science (IACS), 2A & 2B Raja S. C. Mullick Road, Jadavpur, Kolkata-700032** on or before the scheduled date and time specified below:

<b>Tender Notice No.</b>	<b>IC/AM/14/26 dated 18.06.2014</b>
<b>Last date and time of submitting tender</b>	22.07.2014 at 12.30 P.M.
<b>Pre-bid meeting to discuss technical specification</b>	30.06.2014 at 12.30 P.M.
<b>Date and time of opening tender</b>	22.07.2014 at 3.30 P.M.
<b>Place of opening tender</b>	In the office of Dr.AmitMajumdar, Dept. Of Inorganic Chemistry, IACS
<b>Contact</b>	e-mail: <a href="mailto:icam@iacs.res.in">icam@iacs.res.in</a> Tel.+91 33 2473 4971 [Ext. 1165]

The **technical bids** will be opened first to judge/evaluate the technical specifications of the said instrument thereafter the **price bids** of only technically qualified bidders will be opened.

**Technical Bid Evaluation:** The Technical Bids will be evaluated in the presence of the representatives of intending bidders who will be able to clarify technical aspects of their bids, if any, required by the Technical Evaluation Team.

**Opening of price-bid:** The Price Bids of the bidders qualifying the technical bid will only be opened, the date of which will be intimated to the short-listed bidders at their email addresses. The rest of the bids will be rejected.

Please note that IACS will not provide any accommodation or reimburse any expenses to any of the bidders for attending opening of technical bid.

## **1. TECHNICAL BID**

The technical bid should contain technical specifications and should be kept in a separate sealed envelope duly super scribed as 'TECHNICAL BID' on the outer cover of the envelop as already detailed above.

### **Technical Specifications for Inert Atmosphere Glove Box**

The glove box and the accessories should be manufactured and sold by the same parent company or its agents.

#### **Box :**

- (1) Material must be Stainless Steel
- (2) Outer Box Dimensions must be greater than 900mm x 1200mm x 720mm (H x W x D)
- (3) Box Windows should be inclined panel chemical & scratch resistant
- (4) 3 Standard Stainless Steel shelves with multiple, adjustable height positions
- (5) 2 Glove Ports Teflon Type only, Diameter must be greater than 200 mm, O ring sealed
- (6) Two Butyl Gloves, thickness range = 0.4mm - 0.6 mm
- (7) Quick lock door (Glove Port Cover) for pollution free gloves change
- (8) Foot pedal for box pressure adjustment

#### **Stand:**

Lockable levelling feet and castors. Foot pedal must be waterproof

**Filters:** Dust filter 0.3 micron, class H13, One gas inlet/one gas outlet filter

**Box Light:** Fluorescent lamp. External On/Off switch.

#### **Pressure:**

- (1) Inside the box, must be adjustable from -15mbar to +15mbar
- (2) Automatic pressure adjustment by pressure sensor. Pressure regulation must be possible without vacuum pump
- (3) Purity of moisture (< 1 ppm) and oxygen (<1 ppm) must be attainable at complete pressure range

#### **Antechamber:**

- (1) Must be stainless steel (preferably US Type 304), cylindrical, thickness 2.5 mm
- (2) Inside dimensions must be greater than 380 mm diameter x length 580mm
- (3) Sliding tray must be stainless steel, spindle lock type door lock
- (4) Pressure gauge, manometer analogue display
- (5) Vacuum/Refill process - manual operation Via. Hand valves

#### **Mini Antechamber:**

- (1) Inside dimensions not less than 150 mm diameter x length 380 mm

- (2) Sliding tray must be stainless steel, inside and outside doors should be of hinged type
- (3) 1/3<sup>rd</sup> of the mini antechambers should be inside and 2/3<sup>rd</sup> outside

**Purification:**

- (1) Gas purifier must be regenerable
- (2) Should be closed loop gas re-circulation containing Single Filter Purifier, re-generable
- (3) Attainable purity must be: Less than 1 ppm H<sub>2</sub>O and Less than 1 ppm O<sub>2</sub>. Purification capacity must be at least : O<sub>2</sub>: 35L, H<sub>2</sub>O: 1200 g
- (4) Circulation unit should consist of integrated blower, Vacuum tight, Flow rate > 70 m<sup>3</sup>/hr
- (5) Water cooling
- (6) Blower speed reduction and provision for user defined O<sub>2</sub> and H<sub>2</sub>O level for increase of blower speed back to 100%

**Additional necessary requirement:**

In order to allow the exhaust gas to get released outside the laboratory without polluting the laboratory environment, the glove box should have an outlet on top of the box roof which can be attached with the in-house gas outlet piping. The required box outlet mentioned above should have a proper valve to run the purging process without backflow from atmosphere outside the box and should contain a Swagelok type system that can be handled manually.

**Vacuum pump:**

- (1) Vacuum pump should be of type rotary vane pump. Must consist of oil mist filter, oil re-circulation
- (2) Automatic gas ballast control, dual stage, >15m<sup>3</sup>/h. Automatic switch off of vacuum pump

**Regeneration:** Regeneration of purifier materials should use 95% N<sub>2</sub> and 5% H<sub>2</sub> flow gas. It should be automated (PLC controlled), with automatic switching modes (such as auto circulation off). Regeneration period should not be greater than 16 hours.

**Cooling Facility:**

- (1) Heat Exchanger, below
- (2) Water cooling not less than 2L/min (in case of excess heat generation, inside the glove box)

**Valves/piping:**

- (1) Main purifier valves should be of Electro-pneumatic
- (2) Magnetic valve system, DN 6/10
- (3) Manual valves of Swagelok type
- (4) Piping of the box should be as mentioned below :  
Main piping: Stainless steel pipe DN40 KF-flange system

Control pipe work: Stainlesssteel (US 304L) preferred but copper pipe is also acceptable

**User Interface :**

- (1) PLC controller with color touch panel
- (2) Touch panel: English
- (3) User help: Integrated to touch panel
- (4) Display: Pressure (Pa or mmWG or mbar), O<sub>2</sub> and H<sub>2</sub>O, ppm
- (5) Controls: Vacuum chamber handling, force flushing, regeneration/purification

**O<sub>2</sub> and H<sub>2</sub>O Analyzer:**

- (1) PLC controlled
- (2) Technology: Galvanic fuel cell sensors or Solid State sensors
- (3) Cables included
- (4) Measurement and analysis range: Minimum 0-1000 ppm for oxygen probe and minimum 0-500 ppm for moisture probe
- (5) No frequent replacement of oxygen and moisture sensor parts should be necessary
- (6) Should be free from frequent calibration

**Refrigerator:** Temperature 35°C, multiple trays inside with adjustable height

**Solvent filter trap** must be included.

Integrable heat exchanger with suitable chiller.

**Leak tight Feedthroughs (all of these must be included):**

- (1) one electrical feedthrough 220V-15A
- (2) one electrical feedthrough 220V-5A
- (3) 2 blanket leak tight feedthroughs ISO KF 40
- (4) one Vacuum Feedthrough for connecting external vacuum pump
- (5) one 4 banana Ø4 /NW40 feedthrough
- (6) two Gas feedthroughs with Swagelok valves inside and outside the box

**Additional accessories (all of these must be included):**

- (1) Two pairs of additional gloves
- (2) Four O rings for sealing glove ports
- (3) One unit of copper catalyst and one unit of molecular sieves (amount as required to replace the existing catalyst) and one unit of charcoal filter.

**Optional accessory:** Static Eliminator

**Previous records:**

- (1) International installation record.

(2) More than 5 successful installations in eastern region in addition to any standing purchase orders or on-going processes. Proper proof for such installations in eastern region should also be furnished.

(3) Customer satisfaction reports for at least 5 individual users should be furnished.

**Service:** Local service should be available. Details of experienced service engineer including contact details should be provided.

**Warranty:** Minimum one year with two year AMC.

**Installation:** Free installation and user training at IACS.

**Please SUBMIT ITEMIZED QUOTES with separate pricing for each accessory.**

Technical compliance chart should be provided following format\*

Sr.No.	Tender specification	Your offered instrument specification	Extent of compliance
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Tender will not be accepted if the technical compliance chart is not provided following the above format.

User List: The supplier should provide a list of current users (with contact no. Email address etc) for the quoted item in India.

Service facility: Trained technicians should install the instrument and ensure that it is operating correctly and within specifications. User training at site should also be provided. Supplier should mention their details of service setup that are responsible for after sales support.

## 2. PRICE BID

The financial bid indicating (item-wise) price for the item(s) mentioned in the technical bid should be kept in a separate sealed envelope duly super scribed as **PRICE BID** on the outer cover of the envelop as already detailed above. Price bids of only technically qualified bidders will be opened and they will be intimated the date and time of the opening of price bid at their e-mail ids. Rest of the bidders will stand rejected.

**PRICE: Price to be quoted on CIF Kolkata basis.**

## 3. BID SECURITY:

1. An Account payee Demand Draft/Pay Order for Rs. **50000**(fifty thousand only) drawn in favour of **Indian Association for the Cultivation of Science** is to be furnished by the bidders except those who are registered with the Central Purchase Organizations, National Small Industries Corporation or the concerned Ministry or Department, as Bid Security money or Earnest Money Deposit (EMD).
2. The Demand Draft for the Bid-Security should have at least 90 (ninety) days validity period of opening of the bids.

3. In case of non-award of the work the Bid Security money would be returned to the unsuccessful Bidders.

#### **4. PERFORMANCE SECURITY:**

An Account Payee Demand Draft of 10% of the order value in the name of “**Indian Association for the Cultivation of Science**” is to be furnished by the successful bidder as Performance security. Performance security money should remain valid for a period of 60 days beyond the date of completion of all contractual obligations of the supplier including warranty obligations. Bid security money will be refunded to successful bidder on receipt of the Performance security money.

#### **GENERAL INSTRUCTIONS**

1. Validity of tender: Tender submitted should remain valid for at least six months from the date of opening the tender. Validity beyond six months from the date of opening the tender shall be by mutual consent.
2. The tender should accompany a compliance chart.
3. The rate should be inclusive of all taxes, transportation etc. Nothing will be paid in addition to the quoted rate.
4. Incomplete and conditional tenders as well as tenders received after the due date will be summarily rejected without assigning any reasons thereof.
5. At any time prior to the bid due date, IACS may, for any reason, whether at its own initiative or in response to a clarification requested by a prospective bidder during pre-bid meeting, modify the bidding documents. The amendment(s) will be notified on the institute website. Prospective bidders are advised to occasionally to visit the website ([www.iacs.res.in/tender](http://www.iacs.res.in/tender)) for any amendment.
6. **Payments:** 100% against delivery and successful installation or in advance subject to submission of performance guarantee.
7. **Warranty:** Minimum one year with two years AMC/
8. **Installation/Demonstration/Application training** at site: Installation & user training at IACS, free of cost by the supplier.
9. **Service facility:** In Kolkata, supplier should mention their details of service setup and man powers who are responsible for after sales support. Response time should be within 24 hrs.
10. The model number, make and a printed literature of the product shall submit positively.
11. Proposed delivery schedule should be mentioned clearly.

12. Manufacturers / exclusive distributors / vendors should have history of supplying this type of instruments to this or other scientific organizations.
13. Authorised dealership certificate should be provided in case of principal manufacturing company is not quoting directly.
14. Guarantee certificate, users manuals etc. are to be handed over to the user after successful commissioning of the system.
15. In the event of date being declared a closed holiday for purchaser's office, the due date for submission of bids and opening of the technical bids will be the following working day at the appointed time.
16. In case of any dispute, the decision of IACS authority shall be final and bidding on the bidders.
17. For any clarification regarding technical specifications, information etc., please send your queries to Dr.AmitMajumdar (E-mail: [icam@iacs.res.in](mailto:icam@iacs.res.in)).
18. The authority of IACS reserves the right to reject any or all of the tenders received without assigning any reason thereof.

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