



INTERNATIONAL ADVANCED RESEARCH CENTRE FOR POWDER METALLURGY AND NEW MATERIALS (ARCI), Balapur PO, R.R. District, Hyderabad – 500 005, India Tel: 040-244523326, Fax: 040-24442699 Web Site: www.arci.res.in, email : stores@arci.res.in

Tender No.CF20170033/PO

Date 16.01.2018

TENDER DOCUMENT

Four Port Glove box attached with Vacuum Oven Facility for Sodium ION battery work .

1.	Cost of Tender Document (Non- Refundable)	Rs 1000.00
2.	EMD (Earnest Money Deposit/Bid Security)	Rs 125000.00
3.	Tender document published date	16.01.2018
4.	Bid documents can be downloaded from	www.arci.res.in www.eprocure.gov.in
5.	Clarification start date and end date	22.01.2018 to 30.01.2018
5.	Bid submission start and time	05.02.2018 09:00AM
	Bid submission end date and time	15.02.2018 before 3.30 PM
6.	Bids opening date and time (for technical bids covers)	19.02.2018 at 3:00 PM



INTERNATIONAL ADVANCED RESEARCH CENTRE FOR POWDER METALLURGY AND NEW MATERIALS (ARCI), Balapur PO, R.R. District, Hyderabad – 500 005, India Tel: 040-24452326, Fax: 040-24442699 Web Site: www.arci.res.in, email : stores @ arci.res.in

Instructions to Bidder

Table of Contents

Sl. No.	Description	Page No.
1.	Notice Inviting tender	3 to 5
2.	Technical Bid -Terms and conditions	6 to 10
3.	Earnest Money Deposit-Terms and Conditions	11
4.	Price Bid –as per the BOQ available with tender in NIC website	12 to 15
5.	Price Schedule	16 to 17
6.	Vendor declaration	18
7.	Scope of the Work (Technical specifications)	19 to 21
8.	Checklist	22



INTERNATIONAL ADVANCED RESEARCH CENTRE FOR POWDER METALLURGY AND NEW MATERIALS (ARCI), Balapur PO, R.R. District, Hyderabad – 500 005, India Tel: 040-24452326, Fax: 040-24442699 Web Site: www.arci.res.in, email : anirban@arci.res.in

TENDER NOTICE

International Advanced Research Centre for Powder Metallurgy and New Materials (ARCI) is an Autonomous Research and Development Centre of Department of Science and Technology (DST), Government of India with main campus at Hyderabad and with operations in Chennai and Gurgaon.

ARCI would like to procure the following equipment. The Technical Specifications Schedule of Requirements and Allied Technical details are given in Part-1 of tender document.

Item: Four Port Glove box attached with Vacuum Oven Facility for Sodium ION battery work .

Tender Enquiry No: (Case No.) CF20170033/PO dated 16.01.2018

- Last date and time of submission of Tender (Tender fee EMD Technical and Price Bid): 15.02.2018 before 3:30 PM
- Tender fee and EMD should be in the form of Demand Draft drawn in favour of **Director, International Advanced Research Centre, payable at Hyderabad.**
- The item to be delivered and installed at :
Centre for Automotive Energy Materials (CAEM),
ARCI-CHENNAI
IITM RESEARCH PARK, 7TH FLOOR, PHASE 1, SECTION B
6 KANAGAM ROAD,
TARAMANI, CHENNAI 600 113, TAMIL NADU, INDIA

The tender document should consist of the following :

Two bid systems should be followed for this tender. In this system the bidder must submit offer in three separate sealed envelopes i.e., .one envelope for each for technical bid, EMD and commercial bid. These envelopes should be securely sealed and stamped separately and clearly marked as “**Envelope No.1- Tender fee and EMD**”, “**Envelope No. 2- Technical Bid**” and “**Envelope No.3 – Commercial Bid**”. All the sealed envelopes should be placed in another larger envelope. The main envelope which will contain all the envelopes should be superscribed with the tender enquiry no.CF20170033/PO date 16.01.2018 due on 15.2.2018 with name of the equipment /item and is to be submitted to the address given below so as to reach **on or 15.02.2018 at 3.:30 PM.**

The Bidder should ensure that the Prices are mentioned only in the Financial Bid and nowhere in the Technical Bid.

Validity of Bid

Quotation should have minimum validity of **120 days** from the date of opening

Address for submission of the Tender:

**Centre for Automotive Energy Materials (CAEM),
International Advanced Research Centre for Powder Metallurgy and New Materials, IITM
Research Park, Phase-1, 7th Floor, 6, Kangan Road, TS No. 2D, F Block, Taramani,
Chennai- 600 113, Tamil Nadu, India**

Last date for submission: 15.02.2018 at 3:30 PM

Tender should be submitted before last date stated above. The Tenders not accompanied EMD and cost of tender document in the form of Demand Draft favoring Director, ARCI, payable at Hyderabad are liable for rejection.

The bid can be submitted in person or through post/courier. ARCI will not be responsible for transit delay for tenders submitted by Post / Courier etc.

All the tenders, in which any of the prescribed conditions are not fulfilled or incomplete in any respect are liable to be rejected.

Clarification on bid

Bidders can seek clarification as per the schedule start and end date through email IDs given below:

For technical clarifications: **bijoy822000@gmail.com**

For commercial clarifications : **stores @arci.res.in**

Opening of the tender

The offer/bid will be opened by a committee duly constituted for this purpose. The bidder if interested may participated 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. The schedule of tender opening are :

Technical Bid opening date and Time : 19.02.2018 at 3:00 PM (Monday)

Place :- Centre for Automotive Energy Materials (CAEM)

International Advanced Research Centre for Powder Metallurgy and New Materials, IITM Research Park, Phase-1, 7th Floor, 6, Kangam Road, TS No. 2D, F Block, Taramani, Chennai-600 113, Tamil Nadu, India.

The bidders who are technically qualified will be called separately for opening of price bids.

Award of Contract

Contract will be awarded to successful bidder and a copy of the award of the contract will be uploaded in CPPP portal after finalizing the tender.

Disqualification of the Tenders:

The tenders are liable for rejection in the following circumstances:

- If they are not in line with the terms and conditions of this tender notice.
- Conditional quotations
- Incomplete tenders
- Tenders without EMD and cost of tender document
- Tenders submitted through Fax or e-mail
- If two bid system is not followed

Director, ARCI reserves the right to accept or reject any or all tenders either in part or in full or to split the order without assigning any reasons there for.

IMPORTANT NOTE: Amendment, Corrigendum if any to this tender document, WILL BE HOSTED ONLY IN ARCI WEBSITE and CPPP portal and no separate Press Notification will be issued. Bidders are advised to visit our website and CPPP portal regularly to know such details.

Director, ARCI, Hyderabad

PART-1

TECHNICAL BID(Terms and Conditions)

I . Vendor qualification criteria:

- A. Original Equipment Manufacturer (OEM) or authorized representatives of OEM only can quote for this tender. Vendor should submit authorization letter valid on tender date from OEM along with the quotation.
- B. The OEM should have proven expertise in manufacture and supply of the item.
- C. The bidder should have supplied at least 10 or more similar units in India or abroad in the last 5 years.
- D. It is essential that the manufacturer shall provide the list of users of the equipment with contact particulars.
- E. OEM is required to submit a letter of commitment at the time of quote for supply of spares and also for efficient and prompt after sales service of the equipment for a minimum period of 5 years after the guarantee/warranty period under mutually agreed terms and conditions.
- F. Failure to meet any of the above vendor qualification criteria may lead to disqualification of tender at technical evaluation stage itself and vendor's quotation may not be considered for procurement.

II. Pre dispatch inspection

- A. The manufacturer/supplier of the unit shall demonstrate, if required, at their works during pre-dispatch inspection by ARCI personnel and shall satisfy all the technical specifications as described in the tender document.
- B. The manufacturer /supplier of the unit shall demonstrate the features as provided in **Annexure-I (Scope of supply work)**.
- C. All the consumables, raw materials, required for the above demonstration should be arranged by the tenderer.
- D. All the utilities and manpower required for the demonstration shall be arranged by the supplier only

III. Acceptance criteria:

- A. The manufacturer/supplier's trained engineer should carry out installation and commissioning of the unit at ARCI.
- B. The entire functionality of the equipment according to the specifications should be demonstrated at ARCI
- C. The manufacturer /supplier of the unit shall demonstrate the features as specified in **Annexure I (Scope of Supply)**
- D. Required infrastructure required for the above demo will be arranged by ARCI.

IV. Other aspects:

1. PATENT RIGHTS:

The Supplier shall indemnify ARCI against all third-party claims of infringement of patent, trademark or industrial design rights, copy rights arising from use of the Goods or any part thereof in India.

2. Training:

The manufacturer shall impart training in the operation and preventive/breakdown maintenance of the complete unit including sub-parts during installation to ARCI personnel for at least 4 no. of days at ARCI

3. Utilities/Infrastructure for installation:

- A. Supplier shall indicate all the required utilities/infrastructure such as power, water, gas, etc including power backup requirements.
- B. Supplier shall provide overall dimensions of the Unit along with floor area/height of the site or building, including foundation details if any, for accommodating the Unit.
- C. The operating environment for the Unit including temperature and humidity control, anti-vibration, EMI, EMC etc. should be indicated.
- D. If any charges extra are payable for Installation and Commissioning, the same should be included in total cost of the stores as per the price schedule (BOQ).
- E. The equipment should be lifted to 8th floor through the Passenger lift. Keeping this constrain, the dimension of the packing should be restricted to the dimension of the Passenger lift (Lift dimension 0.9m width, 1.7m height, 2.0m depth)

4. Manuals, software and other drawings etc:

The following documents (in English) shall be provided along with the Unit in both hardcopy and softcopy forms:

- A. Operation and maintenance manuals, troubleshooting procedures, calibration methods, wiring and other schematic diagrams, list of components, spares and accessories.
- B. If there are any bought-out systems and components, manuals should be provided in hardcopy and softcopy forms for the same.
- C. Calibration certificates for sensors, instruments, gauges, display units etc. must be provided.
- D. Software upgrades pertaining to the supplied Unit should be provided free of cost as and when new versions are released by the OEM.
- E. Safety and security instruction manual should be provided.

5. After-sales service:

The supplier shall guarantee efficient and prompt after-sales service including the supply of the spares for a minimum period of 5 years after the guarantee/warranty period under mutually agreed terms and conditions.

6. Bought-out items:

All bought-out sub-systems and components if any should be of reputed make conforming to international standards. Make and details of all bought-out sub-systems and components shall be specified.

7. General Quote:

The breakup for accessories or sub system(s) /attachments apart from the basic system, if any, should be quoted separately.

8. Export License: The supplier should clearly indicate their ability/readiness to obtain the export license /clearance from the concerned authority for the supply of the unit as per the contract specifications to ARCI.

9. Technical compliance statement: The vendor should provide item wise details against each and every specification, Deviations if any are to be highlighted.

10. Guarantee/warranty:

The Unit shall be under warranty **for a period of three year from the date of acceptance.** During the warranty period, all software and hardware updates shall be provided free of cost. Items, if any, excluded from the warranty shall be explicitly mentioned by the supplier.

The Unit shall be guaranteed for satisfactory performance for 3 years from the date of installation, commissioning and acceptance at ARCI. The manufacturer shall replace premature failure of parts during the guarantee period at their cost and risk.

11. Delivery/ time schedule:

The offer shall be accompanied by a detailed delivery time schedule showing the individual time schedule required for submission of initial equipment layout drawings, foundation drawings along with load data, main equipment and sub-assembly drawings, shipment schedule of the equipment as well as the time for installation, commissioning and performance tests.

12. Packing:

The Supplier shall provide such packing of the Goods as is required to prevent their damage or deterioration during transit to their final destination. The packing shall be sufficient to withstand, without limitation, rough handling during transit and exposure to extreme temperatures, salt and precipitation during transit and open storage. Packing case size and weights shall take into consideration, where appropriate, the remoteness of the Goods' final destination and the absence of heavy handling facilities at all points in transit. In order to maintain safety of the equipment, we prefer to have wooden crating with adequate cushion inside for transportation of any goods. The Material has to be dispatched with International standard packing to withstand rigors, and to avoid any transit damages.

13. Packing Instructions:

Each package will be marked on three sides with proper paint/indelible ink, the following:

- i. Purchaser Name & Address
- ii. Item Nomenclature
- iii. Order/Contract No.
- iv. Country of Origin of Goods
- v. Packing list reference number

14. Insurance:

The Goods supplied under the Contract shall be fully insured in Indian Rupees against loss or damage incidental to manufacture or acquisition, transportation, storage and delivery.

For delivery of goods at the purchaser's premises, the insurance shall be obtained by the Supplier in an amount equal to 110% of the value of the goods from "Warehouse to warehouse" (final destinations) on "All Risks" basis including war Risks and Strikes. The insurance shall be valid for a period of not less than 3 months after dispatch **or upto installation and commissioning of stores whichever is later** . However, in case of orders placed on FOB/FCA basis, the purchaser shall arrange insurance.

15. General instructions:

- A. The Technical Bid must be submitted in an organized and structured manner. No brochures/leaflets etc. should be submitted in loose form. Please indicate page nos. on your quotation. **The price should not be mentioned anywhere in this document.**
- B. Tenders, which are submitted without following the Two-Bid Offer System, are liable to be rejected.
- C. The technical offer should be complete to indicate that all products and services asked for are quoted. Each page of the bid and cutting/corrections shall be duly signed and stamped by the bidder. Unsigned Tenders are liable to be rejected. Failure to comply with this requirement may result in the bid being rejected.
- D. The purpose of certain specific conditions is to get or procure best product/service etc. for ARCI. The opinion of Technical Committee shall be the guiding factor for technical short listing.
- E. Vendor should provide list of deliverables / bill of materials and services.

PART- 2

EARNEST MONEY DEPOSIT

Earnest Money Deposit in the form of Indian or foreign demand draft Drawn in favour of Director, **International Advanced Research Centre, Payable at Hyderabad.**

No interest is payable on EMD. The EMD will be returned to the bidders(s)/Agents whose offer is not accepted by ARCI within one month from the date of the placing of the final order(s) on the selected bidder(s). EMD of the successful bidder shall be converted into performance guarantee and shall be release on submission of bank guarantee.

EMD in the form of BG is not acceptable.

Amount of EMD Rs.1,25,000.00 (Rupees one lakh twenty five thousand only) in INR or equivalent foreign currency.

Bidder registered with Department of Micro, Small and Medium Enterprises as MSEs and having valid NSIC registration are exempted for payment of tender fee and EMD subject to submission of documentary evidences .Copies of registration certificate and other supporting documents should be submitted in cover no. 1.

PART-3

PRICE BID

I. Terms and Conditions:

- a) Envelope 3 should contain price schedule (as per the table) complete in all respects with proper seal and signature of authorized person.
- b) Tender with any condition, including conditional rebate, are liable to be rejected.
- c) Cost of all the items should be mentioned clearly and individually in the Commercial Offer (Part- III) only.
- d) AMC scope with associated costs including number of visits has to be quoted separately.
- e) The Bidders are requested to quote for **research institutional prices** for Machine/ Equipment and, since ARCI is eligible for the same. The quoting party should ensure that the quoted prices are the minimum and that have not quoted the same item on lesser rates than those being offered to ARCI to any other customer.
- f) Printed conditions of the vendor submitted with the tender will not be binding on ARCI.
- g) The commercial bids of only the technically qualified bidders shall be considered for further processing.
- h) The price quoted shall be considered firm and no price escalation will be permitted during the currency of contract. The quotation should be in standard currency on Ex works/FOB/FOR basis. Freight, insurance, Agency commission (if any) and commissioning charges, if not included, may be quoted separately in Commercial Bid.
- i) Commercial Bid (prices quoted) should not be enclosed in the technical bid envelope. If the price quote is submitted with technical bid the tender are liable to be rejected.
- j) The Director ARCI reserves the right to accept the offer in full or in parts or reject summarily or partly thereof.

II. Payment terms:

- a) For import:

An irrevocable Letter of Credit [L/C] for 100% of the order value will be established by the purchaser in favour of the supplier, through purchaser's bank in India once the following condition is met:

Receipt of order acknowledgement and acceptance of the order.

THE ACTUAL PAYMENT TO SUPPLIER WILL HOWEVER BE RELEASED IN TWO STAGES IN THE FOLLOWING MANNER:

Payment for 90% of the order value will be made upon shipment of the equipment and negotiation of the following shipping documents through L/C:

- 1) Signed Commercial Invoice - Original + 5 Copies

- 2) Airway Bill/Bill of lading - Original + 5 Copies.
- 3) Packing List -Original + 5 Copies
- 4) Certificate of conformity from the supplier that stores/equipment has been tested by the supplier and the same meet the technical specification - Original + 3 Copies.
- 5) Supplier's Certificate to the effect that the contents in each package are not less than those entered in the Invoice and the Packing List - Original + 3 Copies.

Balance 10% of the order value will be released through L/C upon submission of the following documents:

- 1) Commercial Invoice for 10% order value.
- 2) Final Acceptance Certificate [FAC] issued by the purchaser/authorized representative in original against satisfactory installation and commissioning of the equipment at ARCI Site.
- 3) Bank Guarantee Equivalent to 10% of total order value covering warranty period of the equipment issued or counter guaranteed by an Indian Bank clearly mentioning the relation with OEM if submitted by Indian Agent.
- 4) If the above-mentioned performance bank guarantee is not provided, 10% of the order value (i.e. second stage payment) will be released only after the expiry of the warranty period from the date of FAC.

1) Domestic purchase:

Payment Terms

Subject to deduction of taxes at source, if any,

90% of the goods cost + 100% taxes will be paid after receipt of the goods at our site subject to inspection & acceptance of the goods/works/commissioning by ARCI authorities.

Balance 10% will be paid against submission of Performance Bank Guarantee (i.e. 10% of the total order value excluding taxes etc.) from a Nationalized /Scheduled Bank valid till the expiry of the warranty period OR after completion of warranty period from the date of successful commissioning of equipment at ARCI.

III. Final acceptance certificate (FAC)

On installation, the working of the equipment should be demonstrated so as to comply with all the technical specifications. In this connection, it is to be noted that the installation report is not to be treated as the Final acceptance certificate (FAC)

The FAC will be issued by the PURCHASER only on demonstration of the technical specifications. The warranty shall commence only from the date of the issuance of the FAC. The FAC shall be issued by the PURCHASER at a date not later than 30 (thirty) days from the date

of installation provided the equipment functions as per the specifications.

IV. Liquidated damages(LD)

As time is the essence of the contract, delivery period mentioned in the Purchase Order should be strictly adhered to. Otherwise, LD clause will be applicable /enforced. If the supplier fails to Supply, Install and Commission the equipment as per specifications mentioned in the order within the due date, ARCI may levy a penalty for such delay by way of liquidated damages, at 0.5% per week of delay or part thereof, and in aggregate not exceeding 5% of the order value. Such LD will be deducted from any amount due or which may become due to the supplier.

V. Order acceptance

The successful bidder, on award of contract / order, must send the contract / order acceptance in writing, within 15 days of award of contract / order failing which the EMD will be forfeited.

VI. Award of contract:

ARCI reserves the right at the time of award of Contract to increase or decrease the quantity of items specified in the Schedule of Requirements without any change in price or other terms and conditions.

VII. Corrupt or Fraudulent Practices:

ARCI requires that the bidders who wish to bid for this project have highest standards of ethics. ARCI will reject a bid if it determines that the Bidder recommended for award has engaged in corrupt or fraudulent practices while competing for this contract. ARCI may declare a vendor ineligible, either indefinitely or for a stated duration, to be awarded a contract if it at any time determines that the vendor has engaged in corrupt and fraudulent practices during the execution of contract.

VIII. Interpretation of the clauses in the Tender Document / Contract Document:

In case of any ambiguity / dispute in the interpretation of any of the clauses in this Tender Document, Director, ARCI's interpretation of the clauses shall be final and binding on all parties.

The equipment must be supported by a Service personnel trained by the principal vendors

The vendor will have to arrange for all the testing equipment & tools required for installation, testing & maintenance etc. Installation and integration of all supplied hardware and software shall be done by the vendor. The vendor shall install and configure all required hardware and software. The bidder must install and configure user application / software, and demonstrate its running in parallel as part of the system acceptance. The application software will be provided by the Institute.

IX. Indemnity:

The vendor shall indemnify, protect and save ARCI against all claims, losses, costs, damages, expenses, action suits and other proceeding, resulting from infringement of any law pertaining to patent, trademarks, copyrights etc. or such other statutory infringements in respect of all the equipment's supplied by him.

X. Arbitration

For Domestic Supplier

In case of Dispute or difference arising between the Purchaser and a domestic supplier relating to any matter arising out of or connected with this agreement, 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 arbitrator appointed by Director ARCI. The award of the arbitrator so appointed shall be final, conclusive and binding on all parties to this order.

The venue of the arbitration shall be the place from where the purchase order/contract is issued.

Notwithstanding any reference to arbitration herein, the parties shall continue to perform their respective obligations under the Contract unless they otherwise agree.

For Imports

In the case of a dispute between the purchaser and a Foreign Supplier, the dispute shall be settled by arbitration in accordance with provision of sub-clause (a) above. But if this is not acceptable to the supplier then the dispute shall be settled in accordance with provisions of UNCITRAL (United Nations Commission on International Trade Law) Arbitration Rules.

PRICE SCHEDULE FOR FOREIGN SUPPLIERS

Currency:

Sl. No.	Name of the equipment	County of Origin	Quantity	Price in foreign currency
1.	Main equipment			
2.	Accessories			
3.	Spares and consumables			
Packing and forwarding Charges				
Ex-works Price				
Discount if any				
Net Ex-works Price				
FOB Charges				
FOB Price				
Charges for freight and insurance				
Total price (CIF/CIP)				
AMOUNT IN WORDS				

Note: The Bidder may please fill in this form or the same may be typewritten on the Letter Head of the Bidder exactly as per the above format and submit the same as per the instructions given in the tender document.

ARCI is exempted from paying Customs duty as per Notification No.51/96-Cus (as amended from to time). Hence rates to be quoted accordingly.

Other information:

- a) Any installation and commission charges
- b) Any other optional item and their prices should be mentioned separately
- c) AMC Charges

[SIGNATURE OF BIDDER]
NAME AND ADDRESS OF BIDDER

PRICE SCHEDULE FOR DOMESTIC SUPPLIERS

Sl No.	Name of the equipment	Quantity	Unit/Price	Total Amount(Rs)
1	Main equipment			
2	Accessories			
3.	Spares and consumables			
Discount if any				
Net Price				
Taxes (GST with HSN/SAC codes) if any				
Total price (FOR – ARCI)				
AMOUNT IN WORD:				

Note: The Bidder may please fill in this form or the same may be typewritten on the Letter Head of the Bidder exactly as per the above format and submit the same as per the instructions given in the tender document.

ARCI is a public funded research institution, concessional GST rate may please be quoted with reference to GST Notification no. 45/2017 dated 14.11.2017. ARCI will provide certificate for the same

Other information:

- a) Installation and commission charges, if any
- b) Optional items and their prices should be mentioned separately
- c) AMC Charges

[SIGNATURE OF BIDDER]
NAME AND ADDRESS OF BIDDER

Declaration by the Vendor

It is hereby declared that I/We the undersigned, have read and examined all the terms and conditions etc. of the tender document for which I/We have signed and submitted the tender under proper authorization. It is also certified that all the terms and conditions of the tender document are fully acceptable to me/us and I/We will abide by the conditions of the tender. We have not given any printed conditions beyond the scope of this tender. This is also certified that I/We/our principal manufacturing firm has no objection in signing the purchase contract if the opportunity for the supply of the items against this tender is given to me/us.

Date:

Signature:

Name:

Address:

Designation:

On behalf of:

SCOPE OF WORK

Four Port Glove box attached with Vacuum Oven Facility for Sodium ion battery work:

1. Glove Box Modular:

- (i) Material of construction: Stainless steel (304L grade)
 - (ii) Thickness: 3-4 mm
 - (iii) Internal Dimensions (mm): approx.1800-1950 (Width) x 780-800 (Depth) x 900-920 (Height)
 - (iv) Average Load capacity: 100-120 kgs (A special reinforcement should be done accordingly for the box.)
 - (v) Environment: Argon
 - (vi) Stand: A stand of 1000 (+/-20) mm (Height) including castors wheels, leveling feet with an adjustment of pedal switch.
 - (vii) Light : External LED light mounted on the front side (outside of the modular) & should be operable by PLC
 - (viii) Electric power supply: One feed through (230 V, single phase 15A)
 - (ix) Inside of the box should be coated with scratch and chemical resistant material.
- 2. Front view window: Polycarbonate (Scratch and chemical resistant material)**

3. Glove ports:

- (i) Total: Four
- (ii) Type & Location: Round & Front side of the glove box
- (iii) Diameter: 215-220 mm
- (iv) Sealing: O- ring sealed
- (v) Closing lids: Two

4. Gloves:

- (i) Material: n-Butyl rubber
- (ii) Size: Large
- (iii) Diameter: 0.4-0.5 mm
- (iv) Gloves should be resistant to all solvents.

5. Shelves: Three shelves, splitted and mounted at the backside with adjustable height

6. Feed through: Minimum four (Aluminum, single sided for electrical and other instrument cable connections).

7. Filters: HEPA filters, each one for inlet and outlet.

8. Box operating pressure:

- (i) Should be adjustable from -15 mbar to +15 mbar.
- (ii) Automatic adjustment with the touch screen controlled PLC.

(iii) The pressure should be controlled by foot pedal switch during working instantly and it should be water proof.

9. Main Ante-chamber:

(i) Total: One

(ii) Type & Location: Cylindrical & mounted on right side of glove box.

(iii) Dimensions: 580-620 mm (length) and 380-400 mm (diameter).

(iv) Material of construction: Stainless steel (304L grade).

(v) Door lock mechanism: Hinge cover which is easy to operate from inside and outside.

(vi) Sliding tray: Made of stainless steel (304L grade). One-third inside and two-third outside.

(vi) Leak rate: Must be less than 10⁻⁵ mbar liters per second.

(vii) Operation: Manual as well as PLC controlled.

10. Mini Ante-chamber: 2 Nos (one in each side)

(i) Type & Location: Cylindrical & mounted on right and left side

(ii) Dimensions: 140-160 mm (diameter) × 390-410 mm (length).

(iii) Sliding tray: Made of stainless steel (304L grade).. One-third inside and two-third outside.

(iv) Door lock mechanism: Hinge cover which is easy to operate from inside and outside.

(v) Gas purging: Vacuum or refill process should be manual operated by 3 way valve.

(vi) Operation: Manual

11. Gas purification system:

(i) Type: Single filter column gas purifier

(ii) Capacity: Oxygen removal minimum of 36 ltr

(iii) Moisture removal 1200 -1300 g.

(iv) Limits: Both Oxygen & moisture <1 ppm with a leak rate of <0.05 vol%/h.

(v) Piping material: stainless steel (304L grade)

(vi) Purifying volume: Max. 4-5 cubic meter

(vii) Control: All main valves are electro pneumatic with PLC control.

(viii) Regeneration: All Filter columns are also electro pneumatic & filter column regeneration should be automatic sequencing program with PLC controlled.

(ix) Purifying system: Should have water cooled heat exchanger which is integrated with glove box.

(x) Circulation: With integrated blower having 22-88 cubic meter per hour capacity with vacuum tight & oil free set up.

(xi) Required gas for regeneration: Argon+4-8%Hydrogen

12. Vacuum pump: Vacuum pump with oil mist filter and oil recirculation also has to be included in the quote. 15-18 cubic meter per hour performance.

13. Valves/Piping & fittings:

(i) Material: Stainless steel (SS 304L grade).

(ii) Gas inlet and outlet with electro-pneumatic valves

(iii) Complete PLC control/operation on touch panel

14. Vacuum drying oven:

(i) Location: On the rear side (either end) of the glove box

(ii) Dimensions: Inside (240-250 x 240-250 x 300-320 mm) (B x H x T)

Outside (535-545 x 365-375 x 415-425 mm) (B x H x T)

(iii) Volume: Max. 20-25 ltr

(iv) Operating temperature : 30 - 200 degree centigrade (+/- 0.5 degree centigrade)

(v) Time Program: Should be displayed on the panel

(vi) Requirement: It should be attached along with vacuum pump, by the supplier

(vii) Require sliding tray inside vacuum oven

(viii) Materials: Stainless steel (SS 304L grade)

15. Analyzers:

(i) Oxygen analyzer: Solid state one with 0 -1000 ppm with 3m cable within the range of 0 to 10 V

(ii) Moisture sensor: Solid state with 0-1000 ppm, with 3m cable within the range of 0 to 10 V

16. Solvent absorber:

(i) Principle: adsorption

(ii) Absorber: activated charcoal

(iii) Loading: 5-9 kg

(iv) Conditioning with vacuum pump

(v) Inline: Circulation through love box atmosphere with continuous removal of contaminants

(vi) Bypass: with flexibility of manual hand valves, removal of circulation during exchange of the absorber, without breaking the circulation of the gas purifier.

17. Accessories:

(i) Two pairs of gloves & one pair for free of cost

(ii) O-rings two pairs + one pair free of cost

(iii) Two-stage gas regulators for both Argon-Hydrogen and Argon gas bottles.

18. Warranty: 3 years

19. For equipment Supply, installation, commissioning, training and services must be done at

CAEM

ARCI-Chennai

8th Floor, IITM Research Park, Phase 1, Section B

6 Kanagam Road,

Taramani, Chennai 600 113, Tamil Nadu

Tel: 044 66632808

Fax: 04466632802

CHECKLIST

BIDDER HAS TO FILL IN THE CHECK LIST GIVEN BELOW

(State YES/NO for each item)

1.	If bidder is not a original equipment manufacturer, authorization letter attached.	
2.	Whether Earnest Money Deposit (EMD) and tender fee (envelope I) Submitted	
3.	Whether Technical Bid (envelope II) Submitted	
4.	Whether Commercial Bid (envelope III) Submitted	
5.	Whether the Tender Fee & EMD (envelope I), Technical Bid(envelope II) and Price Bid (envelope III) are submitted in separate covers and all the covers enclosed in a common envelope.	
6.	Whether declaration form signed and Submitted	
7.	Validity of 120 days from the date of opening	
8.	Whether warranty clause mentioned	
9.	Does the instrument comply with all the specifications mentioned	
10.	Whether all pages of tender document signed and submitted	

NOTE: Please ensure all the relevant boxes are marked YES/NO against each column.

IMPORTANT NOTE: Tenderers must ensure that all the required documents indicated in the Tender documents are submitted without fail. Tenders received without supporting documents for the various requirements mentioned in the tender document are liable to be rejected at the initial stage itself.