

	<p style="text-align: center;"><b>INDIAN INSTITUTE OF TECHNOLOGY MADRAS</b> Chennai 600 036</p> <p>Telephone: [044] 2257 8356/9760      FAX : [044] 22570545/8366 E-mail: <a href="mailto:arpp@iitm.ac.in">arpp@iitm.ac.in</a></p>	
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P.SARVAHARANA  
Assistant Registrar (Project Purchase)

Ref: ICS/11-12/013/DSTX/TSUN  
Date: 21.07.2016

Tender No: ASE/SRCH/028/2016

**Due Date: 11.08.2016, 3:30pm**

**Technical Bid Opening meeting on 12.08.2016 (Tuesday) at Admin Building Conference room, 2<sup>nd</sup> Floor, IIT Madras at 11.00 a.m to 12.00 p.m.**

Dear Sir/Madam,

On behalf of the Indian Institute of Technology Madras, offers are invited for the supply of “**Anechoic Chamber-1 No**” conforming to the specifications given in Annexure.

**Instructions to the Bidder**

- (i) **Preparation of Bids:** - The tenders should be submitted under two-bid system (i.e.) Technical bid and Financial bid.
- (ii) **Delivery of the tender:** - The tender shall be sent to the below-mentioned addresses either by post or by courier so as to reach our office before the due date and time specified in our Schedule. The offer/bid can also be dropped in the tender box on or before the due date and time specified in the schedule. The tender box is kept in the office of the “**Assistant Registrar, Project Purchase**” IC & SR Building 2<sup>nd</sup> floor, I.I.T. Madras, Chennai – 600 036, which is also the address for communication.
- (iii) **Opening of the tender:** - The offer/Bids will be opened by a committee duly constituted for this purpose. The technical bids will be opened first and it will be examined by a technical committee which will decide the suitability of the bid as per our specifications and requirements. The bidders are requested to attend the opening of **Technical bids schedule on 12.08.2016 (Tuesday) at Admin Building, Conference room, 2<sup>nd</sup> Floor, IIT Madras at 11 a.m. to 12 p.m.** In respect of opening of financial bid, those bidders who are technically qualified only will be called for.

P. SARVAHARANA  
 ASSISTANT REGISTRAR (PROJECT PURCHASE)  
 IC & SR BUILDING 2<sup>ND</sup> FLOOR  
 IIT MADRAS, CHENNAI - 600 036



- (iv) **Prices:** - The price should be quoted in nett per unit (after breakup) and must include all packing and delivery charges to various Departments/Institutions. The offer/bid should be exclusive of taxes and duties, which will be paid by the purchaser as applicable. However the percentage of tax & duties should be clearly indicated.

The price should be quoted without custom duty and excise duty, since I.I.T. Madras is exempt from payment of excise duty, and the custom duty will be paid at concessional rate against duty exemption certificate.

In case of import supply, the price should be quoted on EX-WORKS and CIP basis indicating the mode of shipment.

- (v) **Agency Commission:** - Agency commission, if any, will be paid to the Indian agents in Rupees on receipt of the equipment and after satisfactory installation. Agency Commission will not be paid in foreign currency under any circumstances. The details should be explicitly shown in Tender even in the case of 'Nil' commission. The tenderer should indicate the percentage of agency commission to be paid to the Indian agent. The foreign Principal should indicate about the percentage of payment and it should be included in the originally quoted basic price, if any.
- (vi) **Terms of Delivery:** - The item should be supplied to our various Departments/Institutions as per Purchase Order. In case of import supply, the item should be delivered at the cost of the supplier to our Institution. The Installation/Commissioning should be completed as specified in our important conditions.
- (vii) **Other Terms & Condition:** - please refer the specifications for other terms & conditions.
- (viii) IIT Madras reserves the full right to accept / reject any tender at stage without assigning any reason.

Yours sincerely,



P.SARVAHARANA  
Assistant Registrar (Project Purchase)  
IC&SR, I.I.T. Madras

पी. सार्वहरणा / P.SARVAHARANA  
सहायक कुलसचिव (परियोजना क्रय)  
ASSISTANT REGISTRAR (PROJECT PURCHASE)  
आईसी एवं एसआर केन्द्र / Centre for IC & SR  
आईआईटी मद्रास / I.I.T.MADRAS - 600 036



## SCHEDULE

### Important Conditions of the tender

1. The due date for the submission of the tender is **11.08.2016, 3:30pm.**
2. The offers / bids should be submitted in two bids systems (i.e.) Technical bid and Financial bid. The Technical bid should consist of all technical details / specifications only. The Financial bid should indicate item-wise price for each item and it should contain all Commercial Terms and Conditions including Taxes, transportation, packing & forwarding, installation, guarantee, payment terms, pricing terms etc. The Technical bid and Financial bid should be put in separate covers and sealed. Both the sealed covers should be put in a bigger cover. The Open Tender for supply of " \_\_\_\_\_ " should be written on the left side of the Outer bigger cover and sealed.
3. **EMD:** - EMD of Rs.4,00,000/- (Rupees Four Lakhs) for Anechoic Chamber to be submitted by the bidder. The EMD should be included in the Financial bid which will not be opened for Technical evaluation. Enclosing the EMD in the Technical bid will automatically disqualify the tenderer. EMD should be in the form of DD in favour of "The Registrar, Indian Institute of Technology Madras" and payable at Chennai. The tender without EMD would be considered as UNRESPONSIVE and REJECTED. Photo/FAX copies of the Demand Draft/Banker's pay orders will not be accepted. No interest will be paid for the EMD and the EMD (Bid Security) will be refunded to the successful bidder on receipt of Performance Security.
4. **Performance Security:-** The successful bidder should submit Performance Security for an amount of 5% of the value of the contract/supply. The Performance Security may be furnished in the form of an Account Payee DD, FD Receipt from the commercial bank, Bank Guarantee from any nationalized bank of India will be an acceptable.

**Only after submission of Performance Security, Purchase Order/Work Order will be released / L.C will be opened.**

**Performance Security in the form of Bank Guarantee:-** In case the successful bidder wishes to submit Performance Security in the form of Bank Guarantee, the Bank Guarantee should be routed through the Beneficiary Bank to the end user bank. Otherwise, the Indian Agent of the foreign vendor has to submit a Bank Guarantee through a Nationalized Bank of India.

The Bank Guarantee should remain valid for a period of sixty days beyond the date of completion of all contractual obligations of the supplier including the warranty obligations.



5. If an Indian agent is involved, the following documents must be enclosed:  
Foreign principal's proforma invoice indicating the commission payable to the Indian Agent and nature of after-sales service to be rendered by the Indian Agent.
  - ✓ Copy of the agency agreement with the foreign principal and the precise relationship between them and their mutual interest in the business.
  - ✓ The enlistment of the Indian agent with Director General of Supplies & Disposals under the Compulsory Registration Scheme of Ministry of Finance.
6. The offer/bids should be sent only for a machine that is available in the market and supplied to a number of customers. A list of customers in India and abroad with details must accompany the quotations. Quotations for a prototype machine will not be accepted.
7. Original catalogue (not any photocopy) of the quoted model duly signed by the principals must accompany the quotation in the Technical bid. No prices should ever be included in the Technical bid.
8. Documentary proof for the claimed position and repetition accuracies must be obtained from the principals and submitted along with the relevant pages of the standards.
9. Compliance or Confirmation report with reference to the specifications and other terms & conditions should also be obtained from the principal.
10. **Validity:** Validity of Quotation not less than 90 days from the due date of tender.
11. **Delivery Schedule:-** The tenderer should indicate clearly the time required for delivery of the item. In case there is any deviation in the delivery schedule, liquidated damages clause will be enforced or penalty for the delayed supply period will be levied.
12. **Risk Purchase Clause:-** In the 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 other sources on the total risk of the supplier under risk purchase clause.
13. **Payment:-** No Advance payment will be made for Indigenous purchase. However 90% Payment against Delivery and 10% after installation is agreed to wherever the installation is involved. In case of import supplies the payment will be made only through 100% Letter of Credit and (90% payment will be released shipping documents and 10% after installation wherever the installation is being done).
14. **Advance Payment:-** No advance payment is generally admissible. In case of specific percentage of advance payment is required, the Foreign Vendor has to submit a Bank Guarantee equal to the amount of advance payment and it should be routed through the Beneficiary Bank to the end user Bank. Otherwise, the Indian Agent of the foreign vendor has to submit a Bank Guarantee through a Nationalized Bank of India.



15. **On-site Installation:** - The equipment or machinery has to be installed or commissioned by the successful bidder within 15 to 20 days from the date of receipt of the item at site of IIT Madras.
16. **Warranty/Guarantee:** - The vendors should provide a warranty for at least 12 months from the date of Commissioning of the setup. Any extended warranty offered for the same has to be mentioned separately.
17. **Late offer:** - The offers received after the due date and time will not be considered. The Institute shall not be responsible for the late receipt of Tender on account of Postal, Courier or any other delay.
18. **Acceptance and Rejection:** - I.I.T. Madras has the right to accept the whole or any part of the Tender or portion of the quantity offered or reject it in full without assigning any reason.
19. **Do not quote the optional items or additional items unless otherwise mentioned in the Tender documents / Specifications.**
20. **Disputes and Jurisdiction:** -
  - a. **Settlement of Disputes:** Any dispute, controversy or claim arising out of or in connection with this PO including any question regarding its existence, validity, breach or termination, shall in the first instance be attempted to be resolved amicably by both the Parties. If attempts for such amicable resolution fails or no decision is reached within 30 days whichever is earlier, then such disputes shall be settled by arbitration in accordance with the Arbitration and Conciliation Act, 1996. Unless the Parties agree on a sole arbitrator, within 30 days from the receipt of a written request by one Party from the other Party to so agree, the arbitral panel shall comprise of three arbitrators. In that event, the supplier will nominate one arbitrator and the Project Coordinator of IITM shall nominate an arbitrator. The Dean IC&SR will nominate the Presiding Arbitrator of the arbitral tribunal. The arbitration proceeding shall be carried out in English language. The cost of arbitration and fees of the arbitrator(s) shall be shared equally by the Parties. The seat of arbitration shall be at IC&SR IIT Madras, Chennai.
  - b. **The Applicable Law:** This Purchase Order shall be construed, Interpreted and governed by the Laws of India, Court at Chennai shall have exclusive jurisdiction subject to the arbitration clause.
21. All Amendments, time extension, clarifications etc., will be uploaded on the website only and will not be published in newspapers. Bidders should regularly visit the above website to keep themselves updated. No extension in the bid due date/ time shall be considered on account of delay in receipt of any document by mail.

**Acknowledgement:-** It is hereby acknowledged that the tenderer has gone through all the conditions mentioned above and agrees to abide by them.

**SIGNATURE OF TENDERER  
ALONG WITH SEAL OF THE  
COMPANY WITH DATE**

## SPECIFICATION FOR ANECHOIC CHAMBER

Project no.ICS/11-12/013/DSTX/TSUN

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The following are the details specifications of anechoic chamber proposed at National Centre for Combustion Research and Development (NCCRD), IIT Madras.

1. The proposed anechoic chamber will be located in the third floor of the building.
2. The size of the room available is around 6.63 m x 5.15 m x 3.93 m (height).
3. Four walls, floor and ceiling exist. One wall has windows, and another has a door.
4. The anechoic chamber will be used for testing equipment, flow systems such as jets, propulsion systems, burners, etc. Therefore, facility (space) shall be provided for inflow entrainment and outflow apart from plumbing lines, fluid lines, cables, etc.
5. The entire chamber will have anechoic treatment and the inlet and outlet will have anechoic termination at an offset distance of around 50 cm away from the walls.

### WEDGES

6. Wedge treatment to be provided for all the sides.
7. Wedges shall possess a low frequency cutoff of 250 hertz or below;
8. Above this frequency the wedges shall possess a 0.99 coefficient of absorption, or a ratio of reflected sound pressure of 10% or less.
9. The wedges shall be constructed of fiberglass (safe for human worker presence) with the proper density and flow to meet the specified cutoff frequency.
10. The wedges shall be heat resistant, fire resistant up to around 1000 K.
11. The fiberglass wedges shall be completely covered in fiberglass cloth. The fiberglass wedge shall be inserted into the cloth sock and the sock shall be stitched closed. The fiberglass cloth material shall be JP Stevens #1674 or equivalent.
12. The cloth covered wedges shall be wrapped with ½" x 1" x 19 gauge galvanized hardware cloth. The hardware cloth shall be one piece wrapping the slopes, shoulders and bottom of the wedge. A minimum of five pins shall be used to hold the hardware cloth tight to the wedge face.

### MOUNTING

13. The wedge and coverings shall be held to the wedge-mounting frame
14. The retaining angles shall pinch the hardware cloth to the wedge frame.
15. A minimum of two retaining angles shall be required per wedge peak.
16. A minimum of four pop rivets shall be used to connect the retaining angle to the wedge frame.
17. The wedge frames shall be fabricated from 20 gauge-galvanized steel.
18. The wedge frames shall be notched in the corners to allow them to engage the wedge-mounting track.
19. Floor wedge frames shall have legs to provide the proper air space.
20. The wedges shall be installed on the track in an alternating pattern.
21. Cavities at the end of wedge rows that are less than a standard module width shall be filled with fiberglass. The fiberglass shall be wrapped in fiberglass cloth.
22. As wedges are erected the space (3/8") between adjacent wedge modules at the base shall be filled with a light density compressible fiberglass or melamine foam.
23. Door wedges shall be mounted directly to the door. The door wedges at the jamb shall be curved to allow the door to swing open.
24. An inside "T" handle shall be mortised into a wedge and attached to a backup plate attached to the door.

25. A ventilation wedge shall be placed opposite the ventilation silencer and duct. The location shall be coordinated with the wedge layout.
26. The chamber to have 2 instrumentation sleeves suitably placed.

#### FLOOR GRATING

27. The floor grating sections shall be designed to provide a stable walking surface above the floor wedges.
28. Facility to remove the floor wedges for various experiment scenarios.

#### DESIGN and ENGINEERING

29. Prices include complete set of design drawings in the price. The drawing set should be included, but not limited to plan view, elevations, sections, panel details, and wedge details.
30. Work to commence after mutual acceptance of drawings.
31. Upon completion of the project NCCRD, IITM should receive a set of as built drawings.
32. Calibration curves along multiple lines inside the chamber to be provided by the vendor at the end of installation in the form of inverse square law curves.

#### WEDGE TREATMENT

33. The wedge treatment is 250 hertz perforated metal wedges with fiberglass fill.
34. Jet nozzle anechoic chambers built should have cloth covered fiberglass wedges.
35. The cloth covering prevents erosion of the fiberglass subjected to high velocities.
36. The fiberglass cloth material shall be JP Stevens # 1674 or Equivalent
37. Jet outlet should be designed as per the requirements.

#### DOOR WEDGE

38. Wedge on the existing door to be included.
39. The wedges should be mounted to a tubing frame and to be furnished with an integrated pull handle.
40. The wedges on the door and adjacent jamb should be curved to the door radius to eliminate any reflective area.

#### INSTALLATION

41. Installation of the chamber will be done by your locally trained crew.
42. List of existing installations in any national organisation in India along with contact information of previous clients is mandatory. The feedback from the previous clients will be considered in technical evaluation. Prior experience in performing similar work is mandatory.
43. Provision for hooks from the top to be provided for light weight mountings such as microphones, cameras, etc.