



Indian Institute of Science, BANGALORE 560 012

Centre for Sustainable Technologies

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Date: 21.08.2023

Dr. Souradeep Gupta  
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### **Tender notification for the procurement of a carbon dioxide incubator**

Last date of submission: 12 September 2023

Kindly send your best quotation for a “**Carbon dioxide incubator**” with the technical specifications/general compliance mentioned below. Quote should come only from **Indian Original Equipment Manufacturer (OEM), fabricator or their Indian authorized distributor. Resellers shall not participate.** The quotations should be on FOR-IISc Bangalore basis in INR. The Bidder should belong to either Class-1 or Class-2 suppliers distinguished by their “local content” as defined by recent edits to GFR. They should mention clearly which class they belong to in the cover letter. a) Class-1 supplier: Goods and services should have local content of equal to or more than 50%. b) Class-2 supplier: Goods and services should have local content of equal to or more than 20 % and less than 50%. Bidders offering imported products will fall under the category of non-local suppliers. They cannot claim themselves as Class-1 local suppliers/Class-2 local suppliers by claiming the services such as transportation, insurance, installation, commissioning, training, and other sales service support like AMC/CMC, etc., as local value addition. Purchase preference as defined by the recent edits to GFR (within the “margin of purchase preference”) will be given to the Class-1 supplier. MSMEs can seek an exemption to some qualification criteria. IISc follows GFR2017 for such details.

#### **Technical specifications for a carbon dioxide (CO<sub>2</sub>) incubator**

The CO<sub>2</sub> incubator will be used to store special bio-based and mineral samples (solids) and measure their carbon dioxide uptake over a period of time.

#### **Procedure:**

1. The tenderer should submit the technical and financial bids separately in sealed envelopes superscribing the envelopes as ‘Technical bid’ and ‘Financial bid’. Both these envelopes must be put into a single envelope, superscribed ‘TENDER FOR:

FABRICATION OF CO<sub>2</sub> INCUBATOR”. This should reach the following address by 4 PM on 12 September 2023.

Attn: Dr. Souradeep Gupta  
Centre for Sustainable Technologies  
Indian Institute of Science,  
Bengaluru, Karnataka - 560 012

**Soft copies** are to be mailed to [souradeep@iisc.ac.in](mailto:souradeep@iisc.ac.in) with the subject line ‘TENDER FOR: **carbon dioxide incubator**’.

2. The technical proposal should contain a technical compliance table with 4 columns.
  - a. The first column must list the technical requirements and other requirements, in the order that they are mentioned below.
  - b. The second column should provide specifications of the instrument against the requirement (please provide quantitative responses wherever possible).
  - c. The third column should describe your compliance with a “Yes” or “No” only. Ensure that the entries in column 2 and column 3 are consistent.
  - d. The fourth column can contain additional remarks. You can use this opportunity to highlight technical features, qualify response of previous columns, or provide additional details.
3. Vendors are encouraged to highlight the advantages of their tools over comparable tools from the competitors.
4. In the commercial bid, please provide itemized cost of the system and required accessories, such as software, power supply, etc. The line item shall be “**Fabrication price and commissioning of CO<sub>2</sub> incubator**”.

**Terms and conditions:**

1. The decision of the purchase committee is final.
2. The tenderer is required to carry out full testing and demonstration of the incubator’s performance at Indian Institute of Science, along with training the representative(s) from the institute on the operation and some sample testing for acceptance. All guaranteed specifications will have to be demonstrated, upon request, in an active installation. Failure to demonstrate any promised specifications will be deemed as technical non-compliance.
3. The tenderer has a track record of supplying similar equipment to at least three other organizations, preferably in India. Relevant documents including user testimonial on product performance/maintenance shall be furnished.
4. Clarify if periodic (preventive) maintenance be done by a trained on-site engineer or requires a specialist from the OEM. The vendor should have qualified technical service personnel for the equipment based in India and must assure a response time of less than 2 business days after receiving a service request.
5. The lead-time for the delivery of the equipment should not be more than 2 months from the date of receipt of our purchase order unless otherwise negotiated by IISc.
6. The indenter reserves the right to withhold placement of final order, reject all or any of the quotations and to split up the requirements or relax any or all of the above conditions without assigning any reason.
7. The validity of the quotation shall be at least 12 weeks.

8. Selected vendor must register with IISc (free registration) if not already registered. As per purchase policy, purchase orders can be raised only to registered vendors.
9. Payment will be processed once satisfactory on-site testing and demonstration have been conducted. The vendor must furnish a delivery report countersigned by representative from IISc.

**Technical specifications:**

- a. The capacity of the chamber shall be 400 Liters. The height of the incubator shall not be more than about 1.60 m for logistical reasons.
- b. At least two infrared sensors for monitoring CO<sub>2</sub> concentration in the range of 0.50 to 20% with accuracy of  $\pm 0.05\%$ . Incremental variation of 0.10% shall be allowed.
- c. High quality CO<sub>2</sub> gas filters to ensure purity of CO<sub>2</sub> inside the chamber.
- d. Maximum temperature for sensor functionality: 140 °C or more during dry heat sterilizations
- e. Temperature range of 5 – 60 °C to be maintained within the chamber with accuracy of  $\pm 0.20$  °C.
- f. CO<sub>2</sub> recovery within 3 minutes of door opening.
- g. Operational gas pressure range of 8 – 20 psi.
- h. Inbuilt PLC display showing set point and actual values of CO<sub>2</sub> concentration (in %), temperature and humidity inside the chamber.
- i. The vendor is required to provide leak-proof and compatible tubing from the gas cylinder to the chamber. CO<sub>2</sub> cylinder shall be provided with the incubator 99.97% purity in 47 litres Carbon steel cylinder gas wt: 30 kgs.
- j. Visual and audio alarm system for CO<sub>2</sub> concentration and longer door opening time beyond 5 minutes.
- k. Must be equipped with USB port and touch screen for changing settings and export data as and when necessary.
- l. Chamber design: The body must be stainless steel. The chamber must have an outer door and an inner door with high quality gasket/lining material to prevent gas leakage. The outer door must be stainless steel while the inner door may be glass in a sturdy frame.
- m. Number of shelves: At least 4 shelves with perforations on the base and thickness 3 mm must be provided.
- n. Water tray must be inbuilt for humidity control. Separate water connection is not possible.
- o. Power supply: Shall be preferably single phase, 220 V, 3 pin plug system.

**Other requirements:**

1. The vendor must do due diligence check on all the features of the incubator before delivery, including gas tightness (no leakage), connections, power supply etc.
2. IISc requires at least four (4) years complete warranty from the date of installation for all parts of the CO<sub>2</sub> incubator. Vendors providing longer warranties within a competitive price will be given preference.
3. The vendor must make necessary logistical arrangement for shipping, unloading at the lab premise without any damage, commissioning and installation of the chamber in the presence of a competitive representative from the vendor.

4. Demonstration and training must be carried out within two days of delivery by competitive personnel. IISc will not pay additional for such training/demonstration.
5. IISc will expect acceptance tests, post installation. These can be recorded in the presence of representatives of the vendor and staffs from IISc. Inability to pass these tests will be a counted as a technical failure and breach of contract.

Thanking you,  
Dr. Souradeep Gupta  
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