



**SCHOOL OF CHEMICAL SCIENCES**  
**MAHATMA GANDHI UNIVERSITY**  
**Priyadarshini Hills, Kottayam- 686560**  
**Kerala, India**

e-mail: [office.scs@mgu.ac.in](mailto:office.scs@mgu.ac.in)

Phone: 0481 -2731036

Tender No.: SCS/EEQ/Pro/SKB/01/2024

Dated: 22/02/2024

**NOTICE INVITING TENDER**

**Dr. Subila K.B., PI, EEQ/2023/000374, School of Chemical Sciences, Mahatma Gandhi University, Kottayam** invites sealed tenders in original including all taxes for the supply and installation of scientific equipment from reputed dealers/ firms.

1	Name of the Scientific Equipment	<b>CSS Unit</b> (Detailed specifications given in Annexure-1)
2	Earnest money deposit (EMD)	1% of the estimated value.
3	Security deposit/ FD/ BG	5% of the cost of the equipment
4	Tender submission fee	0.2% of the cost of the equipment rounded to the nearest multiple of 100, subject to a maximum of 25,000/- + GST as applicable
5	Period of supply and Installation	Within 60 days from L/C opening date
6	Address	<b>Dr. Subila K.B., PI, EEQ/2023/000374, School of Chemical Sciences M.G. University, Kottayam, Kerala Pin-686560</b>
7	Date and time of bid opening	22/02/2024, 5.00 pm
8	Last date and Time of submission of tender with relevant documents.	12 days, 05/03/2024, 11.00 am

Duly filled up and signed tender schedule along with relevant documents should be sent to **Dr. Subila K.B., PI, EEQ/2023/000374, School of Chemical Sciences, Mahatma Gandhi University, Kottayam** by speed post so as to reach before the date and time specified. The cover containing the document should be super scribed the **name of the scientific equipment, tender number and last date of submission** of the tender.

Relevant documents may also be sent to: E-mail-[subila@mgu.ac.in](mailto:subila@mgu.ac.in)

### **ELIGIBILITY CRITERIA**

1	Bidder should be a company registered in India or Registered Partnership /proprietary firms	Copy of valid registration certificate/Copy of Certificates of incorporation
2	Should not have been blacklisted by any of the Government entities under state / central government.	Self-Certificate
3	The bidder should have a registered number of (i) GST where his business is located ii) Income Tax / PAN number.	Copies of relevant certificates of registration

Further details can be had from the office of **Dr. Subila K.B., PI, EEQ/2023/000374, School of Chemical Sciences, Mahatma Gandhi University, Kottayam** Email: [subila@mgu.ac.in](mailto:subila@mgu.ac.in) on all working days during working hours. If relevant documents through speed post are not submitted with in time, the tenders will not be considered. The undersigned reserves the right to reject any or all the tender without assigning any reason whatsoever.



**Dr. Subila K.B**

**Please see the Annexures**

## ANNEXURE-1

### Technical Specifications:

1. The bidder must provide valid third party test certificate for CSS Unit
2. A two heating zone rapid thermal processing furnace with 11" I.D. quartz tube, designed for CSS (Close Spaced Sublimation) film coating up to 3" diameter or 2"x2" square.
3. The furnace is heated by two group of halogen heaters (Top and Bottom) separately with max. 20°C/s heating rate.
4. Two 30 segment precision temperature controllers are built in with +/-1°C accuracy.
5. Furnace Structure Spec.: Furnace, two temperature controllers, two channel gas flow meters are integrated into a mobile aluminum alloy frame. The chamber is made of high purity fused quartz tube. Quartz tube size: 11" OD/10.8" ID x 9" H.  
The vacuum flanges are made of Stainless Steel 316
6. Vacuum Flanges: Top Flange with one KFD-25 vacuum port and one gas outlet (1/4" pipe required) can slide up or down manually to load and unload substrate and evaporated material easily. Bottom flange has one KFD-25 vacuum port with one gas inlet (1/4" pipe required) with needle valves. Flange is sealed by double silicone o-rings and can achieve max. vacuum pressure of 10E-2 Torr by a quality mechanical pump and 10E-5 Torr by molecular pump (vacuum pump is not included, please order separately). One digital vacuum gauge is installed on the top flange.
7. Gas flow meters : Gas mixer integrated with two float-meters with adjustable measurement ranges of: 16 -160 mL/m 500 - 5000 mL/m (for purging purpose)
8. Heater and Sample Holder: Two independently controlled heaters with manually adjustable gap from 2 - 30 mm, 20 pcs Halogen lamps are used as heating element for rapid thermal processing. Heaters are made of stainless steel with water cold jacket to reduce heat radiation and allow for fast cooling. 5" dia. circular wafer holder is built into top heater for holding substrate. One set of high thermal-conductive AlN plates (5" Dia. X 0.5mm Thick) are included (place on the back of substrate to make it heat uniformly). A 16L/min recirculating water chiller is included for saving water source.
9. Temperature Controller Two precision digital temperature controllers with 30 segments programmable offer independent controlling of top and bottom heaters. Each controller has PID auto tune function to protect heaters from overshooting and alarm function to avoid overheating and thermal couple broken.
10. Working Temperature Max. temperature for each heaters:  $\leq 800^{\circ}\text{C}$ . Max. temperature difference between two heaters:  $\leq 300^{\circ}\text{C}$ . depends on spacing between two heaters: Spacing 30mm Max. temp difference:  $315^{\circ}\text{C}$  @ heating bottom only.
11. Heating & Cooling Rate Heating:  $> 8^{\circ}\text{C/s}$  ( heating single heater only ). Cooling:  $> 10^{\circ}\text{C/s}$  (600 - 100°C) Max.
12. Thermal Couple: Two K-type thermal couples are installed on top and bottom heaters separately
13. Working Voltage 208 - 240VAC, single phase, 20A air breaker.
14. Power Requirement 2200W total ( 1100W for each heater )
15. Warranty One year limited with life time support

16. Dimensions 1085mm L x 680mm W x 1710mm H

## **ANNEXURE-II**

### Terms and Conditions

1. Last date of submission of tender along with requisite fee, EMD and all documents is 05.03.2024, 11 am
2. The technical bid will be opened on 22.02 .2024 at 5 pm.
3. Tenders must accompany a copy of the “Annexure II and Annexure III” section of this document, signed and stamped on each page indicating that they agree to these.
4. The non-refundable application fee of 0.2% of cost with the challan of 5% of it as GST must be accompanied with tender for each instrument. The application fee must be as D.D. drawn in favor of Professor and Head, School of Chemical Sciences , Mahatma Gandhi University, Kottayam
5. The DD/Cheque for EMD or any other must be drawn in of favour of Professor and Head , School of Chemical Sciences , Mahatma Gandhi University, Kottayam payable at SBI Mahatma Gandhi University Campus Branch.
6. Instrument should have a warrantee of at least one year and should have at least one Service engineer and one application scientist based in India with onsite trainingfacility on the same quoted equipment. Training should include operation, handlingand maintenance of system.
7. A good record in supply and service to other research institutes will be considered as a positive point for a particular company. User list of similar equipment supplied recently in India should be provided.
8. Laboratory floor space, electrical power requirements, earthing, room temperature/humidity requirements etc. should be mentioned appropriately.
9. All necessary accessories should be supplied with the instrument, as per standard package offered, including complete set of service and operation manuals for diagnosis, trouble shooting, maintenance and electronic circuitry (hard and soft copies).
10. The Delivery Schedule, Payment Terms & Warranty/Guarantee etc must be clearly indicated in the technical bid. The charges for extended warranty and/or Annual Maintenance Contract after the expiry of offered warranty period should also be specified in the financial bid.
11. The price of the equipment should be quoted in Indian rupee. The total price of the equipment quoted should be inclusive of GST & other taxes if any; material cost; transportation cost; loading and unloading cost; installation cost; labour charges and all other expenses in whatsoever means.
12. Payment process will be initiated only after supply of items as per tender specifications and satisfactory installation of the items.
13. It will be the responsibility of the supplier to deliver the ordered materials at School

of Chemical Sciences, Mahatma Gandhi University, Kottayam. All required materials for satisfactory installation are to be provided by the supplier at their own cost.

ANNEXURE III:

**TENDER FORM PART-I (TECHNICAL BID)**

**Date:**

**M/s.** .....

To,

Dr. Subila K.B., PI, EEQ/2023/000374,

School of Chemical Sciences

M.G. University, Kottayam, Pin-686560

Kerala, India.

Dear Sir,

I/We have gone through the tendering conditions pertaining to the Tender and General Terms and Conditions of Contract and other requirement for delivery and complete Installation and Special Conditions of Contract contained herein with this tender document. I/we hereby agree to supply the stores conforming to the tender specifications incorporated in ANNEXURE II of the tender document and also agree to abide by your General Conditions of all Contra acts and Special Conditions of Contract contained in the ANNEXURE II of the Tender document.

You will be at liberty to accept any or more of the items of stores offered by us and I/we shall be bound to supply you the stores as may be specified in the Purchase Order/Contract.

I/We hereby agree to keep the price valid for your acceptance for a period of 30 days from the date of opening of Part-11 (Financial bid) of the tender. Deviations to Technical specifications contained in ANNEXURE I of the tender documents are detailed in ANNEXURE-A to the tender form while deviations proposed to the General Special Conditions of Contract contained in ANNEXURE II *are* detailed in Annexute-B to this tender. Price applicable for the stores are indicated separately in a sealed envelope marked as financial bid of the tender.

1/We are also enclosing herewith all the leaflets catalogue etc. pertaining to the stores offered. Yours faithfully

Stamp and Sign of the Tenderer

**ANNEXURE III:**

**TENDER FORM PART-II (FINANCIAL BID)**

**Date:**

**M/s. ....**

To,

Dr. Subila K.B., PI, EEQ/2023/000374,

School of Chemical Sciences

M.G. University, Kottayam, Pin-686560

Kerala, India.

Dear Sir,

In response to your invitation and as per your tendering and contracting conditions, the prices applicable for the scope of supply contained in ANNEXURE-III (TECHNICAL BID) of our tender are indicated in the format at annexure "A" to this tender.

We hereby agree to keep the price valid for your acceptance for a period of 30 days from the date of actual opening of Part-II (FINANCIAL BID) of the tender.

Yours faithfully,

Stamp and Signature of the Tenderer

