

## Invitation to Tender for Supply of Equipment

Sealed tender offers are invited in two separate sealed covers (Technical and Commercial offers) from eligible manufacturers/suppliers or their direct Indian agents for the supply of the following equipment.

SI No.	Description	Quantity
01	<b>Programmable Horizontal Three Zone Split Tube Furnace</b>	01

Please send offers, **ALONG WITH DESCRIPTIVE CATALOGUE/ BROCHURE**. The validity of the bid should be at least four months (120 days) or more from the date of the opening of this tender. Please ensure that your quotation reaches not later than **19.12.2017 at 15:00 Hrs** at the following address:

**Dr. Basab Chakraborty,**  
**Assistant Professor, Rajendra Mishra School of Engineering Entrepreneurship,**  
**Indian Institute of Technology Kharagpur – 721 302, West Bengal, India**

Earnest money of **Rs. 10,000/-** is to be deposited in the form of Account payee Demand Draft in favour of IIT Kharagpur, payable at Kharagpur, India. Any bid which is not accompanied with an EMD shall be summarily rejected. Earnest money deposited will be forfeited if the tenderer withdraws or amends its tender or impairs or derogates from the tender in any respect within the period of validity of its tender. No interest will be paid on the earnest money of the unsuccessful bidders.

Tender Reference	<b>IIT/SRIC/RMSEE/LAR/BC/2017-18/FS-3, Dated: 29.11.2017</b>
Price of Tender Document	<b>NIL</b>
Last Date and Time for submitting the tender document	<b>19.12.2017 at 15:00 Hrs (Indian time)</b>
Time and Date of Opening of Technical Bids	<b>19.12.2017 at 16:00 Hrs (Indian time)</b>
Place of Opening Tender	<b>Rajendra Mishra School of Engineering Entrepreneurship, Indian Institute of Technology Kharagpur – 721 302, West Bengal, India</b>
Address of Communication	<b>As stated above</b>
Contact Telephone Numbers	<b>+91- 3222 - 282416</b>
E-mail	<b>basab@see.iitkgp.ernet.in</b>

**Detailed Technical Specifications for**  
**Programmable Horizontal Three Zone Split Tube Furnace**

Sl. No.	Item Description	Vendor's Comments	
		Compliance (Yes/No)	Specifications
1.	<b>Model Name:</b> Clearly mention make, model and model number of the equipment being offered. Include photographs (side-views and top views) of the actual model being offered.		
2.	<b>Furnace Type:</b> Programmable Horizontal Three Zone heating Split Tube Furnace With Stand		
3.	<b>Working Tube:</b> a. Dimension of <b>Each Hot Zone</b> (OD X ID X L): 60 mm X 50 mm X 300 mm <b>A total of three Hot Zones required with a provision of maintaining three different temperatures in three hot zones simultaneously. Example: Three different samples need to be heated during an experiment in the three zones at different temperatures: Hot Zone-1: 400 °C, Hot Zone-2: 1000 °C, Hot Zone-3: 1400 °C.</b>		
	b. Minimum Total Tube length : 1200 mm		
	c. Tube type : Both end open Alumina tube (>99.5% Purity); with a provision to inject gas		
4.	<b>Maximum Temperature:</b> 1400 °C or higher		
5.	<b>Maximum Continuous Working Temperature:</b> 1400 °C		
6.	<b>Range of Continuous Working Temperature:</b> Room Temperature to 1400 °C		
7.	<b>Temperature Accuracy :</b> ±1 °C		
8.	<b>Heating Rate:</b> At least 10 °C/min till 1200 °C and 5 °C/min to 1400 °C		
9.	<b>Thermocouple Type:</b> R type housed in protective high alumina tube		
10.	<b>Body Construction:</b> 16'' MS sheet, Double layer steel body with superior powder coated finish. Cooling fan to be provided to maintain long life of refractory and surface temperature below 60 °C. At least 1 air filter to be provided.		

Table contd.

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Sl. No.	Item Description	Vendor's Comments	
		Compliance (Yes/No)	Specifications
11.	<b>Insulation Type:</b> Suitable and sufficient layer of insulation to prevent heat loss.		
12.	<b>Furnace Atmosphere:</b> Furnace should be capable of operating in normal air as well as with controlled inert atmospheres of Ar, N <sub>2</sub> , H <sub>2</sub> , O <sub>2</sub> etc. <b>[Future provision should be provided for usage under vacuum condition]</b>		
13.	<b>Temperature Control :</b> PID based temperature controllers should have facility for at-least 2 Program with 20 Steps each; Provision should be there for the entry of Parameters such as Temperature & Time in steps of 1°C & 1 minute respectively; Status messages in the form of texts only should be displayed. Program should be such that start time is configurable; Skip-button for segment jump & alarm system should be provided. Display should be digital (not in codes). Provision of two controllers for each hot zone with programmable facility should be there for safety of the furnace.		
14.	<b>Temperature Uniformity inside Hot Zone:</b> ±2 °C or less Actually measured temperature profiles of the offered model should be included in the Technical bid to support the claim of temperature uniformity.		
15.	<b>Heating Elements:</b> High Grade SiC with power rating and operational life details		
16.	<b>Thermocouple Failure Alarm:</b> Yes		
17.	<b>Over Temperature Protection:</b> Should be integrated in the system		
18.	<b>External Voltage Input:</b> 230 V AC / 50 Hz / Single phase or Equivalent		
19.	<b>Certification:</b> CE certified, ISO certified		
20.	<b>Vacuum/Gas Accessories:</b> Appropriate stainless steel/aluminum flanges, O-rings, gaskets, hoses, valves and pressure gauges and gas flow measurement device should be included. All connections and seals should be ready to connect for protective gas usage.		

Table contd.

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Sl. No.	Item Description	Vendor's Comments	
		Compliance (Yes/No)	Specifications
21.	<b>Accessories:</b> a. Sample placement rod b. 2 spare heating elements c. 2 spare R-type thermocouples d. Tong of proper size for sample handling		
22.	The supplier must have local service centre and technical expertise (including factory trained experienced service engineers & application specialists) in Kolkata or areas nearer to Kharagpur for after sales service and application support.		
23.	The same quoted system must have at least 30 nos. programmable Horizontal Split Tube furnaces installed in IITs or IISERs or Govt. Of India organizations or any other reputed private R&D laboratory in India. Please submit the documentary evidence/proof (installation acceptance certificate or PO copies) for the same.		
24.	Warranty: Minimum 2 years for the complete system and service support for minimum 3 years.		
<b><i>If the bidder fails to provide compliance statement as per our format and sequence, the technical bid will liable to be rejected. Every item of compliance statement must be supported by the technical literature. All literature must be accompanied with technical bid.</i></b>			
<b><i>The manufacturing date of the equipment must be after the date of placing an order for purchase.</i></b>			

## GENERAL TERMS & CONDITIONS

PLEASE SPECIFICALLY INDICATE THE FOLLOWING POINTS IN YOUR QUOTATIONS AND COMPLY THE TERMS AS MENTIONED HEREUNDER:-

1. TENDERS ARE INVITED COMPLYING THE REQUIREMENT FOR TENDER AS DETAILED IN THE TENDER SPECIFICATION TO BE SUBMITTED IN THE COMPANY'S / FIRM'S LETTERHEAD NEATLY PRINTED / TYPED DULY SIGNED BY AUTHORIZED PERSON WITH THE SEAL OF THE BIDDERS. ALL ENVELOPES CONTAINING THE TENDER SHOULD BE PROPERLY SEALED. SEPARATE ENVELOPES SHOULD BE USED FOR TECHNICAL AND PRICE BID AND INDICATION TO THEIR EFFECT MAY PLEASE BE SUPERSCRIBED ON THE ENVELOPE.

### **THE FOLLOWING DOCUMENTS ARE REQUIRED FROM THE INDIAN AGENTS OF FOREIGN FIRMS:**

1.1 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.

1.2 COPY OF THE AGENCY AGREEMENT WITH THE FOREIGN PRINCIPAL INDICATING THE NATURE OF AFTER SALES SERVICES, PRECISE RELATIONSHIP BETWEEN THEM AND THEIR MUTUAL INTEREST IN THE BUSINESS.

1.3 PLEASE ENCLOSE THE DOCUMENT(S) RELATED TO THE ENLISTMENT OF THE INDIAN AGENT WITH DIRECTOR GENERAL OF SUPPLIES & DISPOSALS (DGS & R) UNDER THE COMPULSORY REGISTRATION SCHEME OF MINISTRY OF FINANCE.

2. TECHNICAL CATALOGUE/LEAFLET SHOULD BE ENCLOSED WITHOUT FAIL. PROVIDE COMPLIANCE STATEMENT WITH RESPECT TO THE TECHNICAL SPECIFICATIONS MENTIONED ABOVE.
3. PLEASE CONFIRM WHETHER YOU ARE AUTHORISED TO QUOTE ON BEHALF OF YOUR PRINCIPALS AND IF SO, PLEASE ENCLOSE A COPY OF SUCH AUTHORISATION WITH YOUR QUOTATION.
4. **PRICE BIDS FOR FOREIGN FIRMS:** PRICES ARE TO BE QUOTED ON 'EX-WORKS' DULY PACKED OR ON "FCA/FOB" INTERNATIONAL PORT" BASIS AND ALSO INCLUDING AGENCY COMMISSION PAYABLE TO YOUR INDIAN AGENTS, IF ANY SHOWING CLEARLY THE FOLLOWING BREAK UP:-

- I) EX-WORKS PRICE
- II) PACKING & FORWARDING
- III) FREIGHT
- IV) ANY OTHER RELEVANT EXPENSES.
- V) TAXES PAYABLE BY THE INSTITUTE

INSURANCE WILL BE PAID BY OUR INSTITUTE SEPARATELY AND SHOULD NOT FORM PART OF THE QUOTED PRICE.

**PRICE BIDS FOR INDIAN FIRMS:** PRICES ARE TO BE QUOTED ON F.O.R., IIT KHARAGPUR, ON DOOR DELIVERY BASIS CLEARLY SHOWING THE BREAKUP.

5. **PERIOD OF VALIDITY:** BIDS SHALL REMAIN VALID FOR ACCEPTANCE FOR A PERIOD OF 120 DAYS FROM THE DATE OF OPENING.
6. INDIAN AGENTS ADDRESS AND PERCENTAGE OF AGENCY COMMISSION INCLUDED IN ABOVE F.O.B./EX-WORKS PRICE. (THIS WILL BE PAID TO THE INDIAN AGENTS IN INDIAN RUPEES ONLY AND NOT IN **FE**). PLEASE ENCLOSE COPY OF AGENCY AGREEMENT ENTERED INTO WITH YOUR

PRINCIPALS INDICATING THE NATURE OF AFTER SALES SERVICES OF INDIAN AGENTS, PRECISE RELATIONSHIP & MUTUAL INTEREST IN THE BUSINESS.

7. **MEASUREMENTS/WEIGHT:** NETT/GROSS OF THE CONSIGNMENT. IN CASE OF AN ORDER, YOU SHALL USE AIR WORTHY PACKAGE (AS APPLICABLE) DULY CERTIFIED WITH DOCUMENTS – PLYTO – SANITARY CERTIFICATE (AS PER QUARANTINE ORDER 2003).
8. **SCOPE OF SUPPLY:** SHOULD INCLUDE FREE INSTALLATION AND COMMISSIONING
9. **PAYMENT TERMS FOR FOREIGN FIRMS**

A) 90% PAYMENT THROUGH SIGHTDRAFT/FORIGN DEMAND DRAFT/LC (EXCEPTIONAL CASES)/SWIFT TELE TRANSFER AFTER RECEIPT OF STORE IN GOOD ORDER AND CONDITION AND 10% AFTER SUCCESSFUL INSTALLATION & COMMISSIONING.

B) BANK CHARGES ON LC/SD (WITHIN INDIA APPLICANT ACCOUNT AND OUTSIDE INDIA TO BENEFICIARY ACCOUNT).

**PAYMENT TERMS FOR INDIAN FIRMS**

A) 100% PAYMENT THROUGH CROSSED ACCOUNT PAYEE CHEQUE / ELECTRONIC TRANSFER AFTER RECEIPT OF STORE IN GOOD ORDER AND CONDITION.

B) ENSURE MENTIONING

i) BANK DETAILS OF THE BENEFICIARY, GST NO. AND PAN NUMBER

ii) FULL NAME AND ADDRESS OF THE BENEFICIARY ON WHOM ORDER HAS TO BE PLACED

10. WHETHER ANY EXPORT LICENCE IS REQUIRED FROM YOUR GOVERNMENT, IF SO, PLEASE CONFIRM DETAILS.
11. COUNTRY OF ORIGIN OF THE GOODS IS TO BE MENTIONED.
12. THE INSTITUTE SHALL PROVIDE THE CONCESSIONAL CUSTOMS DUTY AND EXCISE DUTY EXEMPTION CERTIFICATE AS PER GOVT. NOTIFICATION NO. 51/96 CUSTOMS DATED: 23.07.1996 AND CENTRAL EXCISE DUTY EXEMPTION IN TERMS OF GOVT. NOTIFICATION NO. 10/97 – CENTRAL EXCISE DATED: 01.03.1997 AS AMENDED FROM TIME TO TIME.
13. **LIQUIDATED DAMAGES:** THE STORES SHOULD BE DELIVERED / DISPATCHED TO DESTINATION AND READY FOR OPERATION NOT LATER THAN THE DELIVERY DATE SPECIFIED. IF THE SUPPLIER FAILS TO DELIVER ANY OR ALL THE STORES OR PERFORM THE SERVICE BY THE SPECIFIED DATE, LIQUIDATED DAMAGES AT 1% PER MONTH OR PART THEREOF IN RESPECT OF THE VALUE OF STORES WILL BE DEDUCTED FROM THE CONTRACT PRICE SUBJECT TO A MAXIMUM OF 5%. ALTERNATIVELY, THE ORDER WILL BE CANCELLED AND THE UNDELIVERED STORES PURCHASED FROM ELSEWHERE AT THE RISK AND EXPENSE OF SUPPLIER.
14. **PATENT RIGHTS:** THE SUPPLIER SHALL INDEMNIFY THE PURCHASE AGAINST ALL THIRD PARTY CLAIMS OF INFRINGEMENT OF PATENT, TRADEMARK OR INDUSTRIAL DESIGN RIGHTS ARISING FROM USE OF THE GOODS OR ANY PART THEREOF IN INDIA.
15. ONLY THOSE BIDDERS WHOSE BIDS HAVE BEEN TECHNICALLY FOUND ACCEPTABLE WILL ONLY BE INVITED FOR PARTICIPATION IN THE PRICE BID.

16. THOSE BIDDERS WHO DO NOT RECEIVE ANY COMMUNICATION FOR PARTICIPATION IN PRICE BID OPENING MEETING MAY PRESUME THAT THEIR BID HAS NOT BEEN ACCEPTED BY THE INSTITUTE.

17. CONDITIONAL OFFER WILL NOT BE ACCEPTED.

18. LATE TENDERS I.E. TENDER RECEIVED AFTER THE DUE DATE AND TIME OF SUBMISSION AS MENTIONED ABOVE SHALL NOT BE ACCEPTED.

19. BIDDERS TO ENCLOSE THE FOLLOWING DOCUMENTS:-

A) INCOME TAX RETURN (3 YRS) AND LATEST SALES TAX RETURN (GST No.), AND PAN NO.

A) BANKER'S SOLVENCY CERTIFICATE

C) SUMMARY OF AUDITED STATEMENT OF ACCOUNTS FOR THE LAST THREE YEARS TO BE ENCLOSED AND FINANCIAL HIGHLIGHTS AND THE KEY PERFORMANCE DURING THE LAST THREE-QUARTERS TO BE ENCLOSED AS PER FORMAT:-

COMPANY'S KEY PERFORMANCE

DESCRIPTION	JAN. TO MARCH	APRIL TO JUNE	JULY TO SEPT.
GROSS REVENUE			
PROFIT BEFORE TAX			
PROFIT AFTER TAX			
RETURN ON INVESTED			
CAPITAL (ROIC)			

D) CUSTOMER SATISFACTION CERTIFICATE FROM ONE SUCH ORGANIZATION IS TO BE ATTACHED WITH THE TECHNICAL BID AND PRICE BID.

E) NAME AND ADDRESS OF MINIMUM THREE CLIENTS TO WHOM SUCH EQUIPMENT HAVE BEEN SUPPLIED SHOULD BE MENTIONED.

20. **WARRANTY:** THIS COMPREHENSIVE WARRANTY SHALL REMAIN VALID FOR MINIMUM **24 MONTHS** AFTER THE GOODS (OR ANY PORTION THEREOF AS THE CASE MAY BE) HAVE BEEN DELIVERED AND COMMISSIONED TO THE FINAL DESTINATION. SERVICE SUPPORT TO BE ENSURED FOR MINIMUM **36 MONTHS** AFTER THE GOODS (OR ANY PORTION THEREOF AS THE CASE MAY BE) HAVE BEEN DELIVERED AND COMMISSIONED TO THE FINAL DESTINATION.

21. THE INSTITUTE DOES NOT BIND ITSELF TO OFFER ANY EXPLANATION TO THOSE BIDDERS WHO'S TECHNICAL BID HAS NOT BEEN FOUND ACCEPTABLE BY THE EVALUATION COMMITTEE OF THE INSTITUTE.

22. ALL TENDERS (UNLESS OTHERWISE SPECIFIED) ARE TO BE SUBMITTED / HANDED OVER TO **DR. BASAB CHAKRABORTY, RAJENDRA MISHRA SCHOOL ENGINEERING ENTREPRENEURSHIP, INDIAN INSTITUTE OF TECHNOLOGY, KHARAGPUR - 721 302** AND ACKNOWLEDGEMENT TO BE OBTAINED.

## **IMPORTANT**

1. IIT Kharagpur authority may accept or reject any or all the bids in part or in full without assigning any reason and does not bind itself to accept the lowest bid. The Institute at its discretion may change the quantity / upgrade the criteria / drop any item or part thereof at any time before placing the Purchase Order.
2. Promptly make arrangements for repair and/or replacement of any damaged item (s) irrespective of the settlement of the claim.
3. In the case of any dispute, the decision of the Institute authority shall be final and binding on the bidders.
4. For any query pertaining to this bid, document correspondence may be addressed to **Dr. Basab Chakraborty**, at the address mentioned above.

### **LAST DATE FOR SUBMISSION OF SEALED BIDS: 19.12.2017**

- 1) Please Note that the Institute remains closed during Saturdays & Sundays and all specified government holidays.
  - 2) Fax, e-mail Tender will not be accepted.
  - 3) The General Terms and Conditions as stated above relate to supply of stores/equipment /assets etc. and for specific service, other terms and conditions of the Institute will apply.
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