

Minutes of the Pre-Bid Meeting held on 21.08.2018 at Conference Hall, Administrative Block, Room No. F1-02 (First Floor), CUTN in connection with our Tender No.12/2018-19 for Supply and Installation of 3-Zone Tube Furnace (for Chemical Vapour Deposition) for Department of Materials Science.

The following members of the Committee were present:

1. Dr. S. Beer Mohamed, Associate Professor & Head, Department of Materials Science - Chairperson
2. Mr. R. Ramesh, Section Officer (Purchase – II) – Purchase Nominee
3. Dr. V. Gunasekaran, Assistant Professor, Department of Materials Science – Member & Convener

The Tender Document was uploaded in our website & CPP Portal and the enquiry was forwarded to prospective vendors through email.

The following prospective bidders attended the Pre Bid Meeting: -

- 1) M/s. The Precision scientific (CBE) Private Limited, Trichy
- 2) M/s. UHP Technologies

The attendance sheet for Pre-bid meeting is enclosed herewith. (Annexure – I)

Opening Remarks:

- i. Dr. S. Beer Mohamed, Associate Professor & Head, Department of Materials Science - Chairperson welcomed the participating member and after introduction, he briefed all participants about the tender.
- ii. It was explained that purpose of Pre-Bid Meeting is to explain the various important provisions of the bidding documents to the prospective bidders and to clarify the queries that the bidders may have in the subject, bidding documents.

Sl. No	Query	Answer
1.	04 weeks is very less to deliver the equipment, components such as MFC's and furnace will take minimum of 10 to 12 weeks to arrive from OEM's. Hence we request to extend the deadline to 14 to 16 weeks.	It will be amended as 16 weeks in revised document.
2	Please specify allowed or desired delta T between the heating zones	We have mentioned the Heating zone information in the revised specs.
3	We recommend to specify that SS lines shall be electro-polished internally and all joints shall be face sealed (VCR) type. This is important to achieve leak integrity and required to achieve desired vacuum level and maintain purity of precursors	This point is accepted. The same will be updated in the revision version of specs.
4.	We recommend to have isolation valves as diaphragm valves with face sealed end connections. This is	This point is accepted. The same will be updated in the revision version of specs.

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14/9/18

S. Beer Mohamed
11/9/2018

R. Ramesh
11/9/18

Dr. V. Gunasekaran
11/9/18

	important to maintain leak integrity of the system.	
5.	Do you need water cooling flanges at the end of quartz tube? This will help to cool down the system quickly.	This will be included as optional requirement.
6.	Do you need quartz boat and quartz rod to place the substrate? Please specify in the tender if required.	This will be included as optional requirement.
7.	Safety system is not given in tender specification. CH ₄ being hazardous/flammable gas, we recommend to incorporate gas leak detector and necessary interlocks with emergency push buttons for the system.	This is accepted. The suggestion is updated in the revised specs.
8.	Do you need scrubber for the vent gas as the content might be hazardous? As per pollution control norms and as per safety standards, we must have scrubber for the flue gases. We recommend to have a dry bed scrubber.	This will be included as optional requirement.
9.	We recommend to house the system in an enclosure with proper exhaust system connected to blower with necessary interlocks. This is important to avoid accumulation of leaked gases around the system leading	This will be included as optional requirement.
10.	Do you need gas purifier for CH ₄ and Ar to achieve better gas/precursors purity and better growth of material on substrate ?	This will be included as optional requirement.

The Amendments has been given in Annexure – II. The bidders were informed to ensure that all mandatory documents / certificates / undertakings are to be enclosed with the bids, as specified in the tender document.

Apart from the aforesaid suggestion, there were no technical queries from the bidder's side, hence the Committee felt that there is no need for amendment in the tender document.

Vinay Jeeva
11/9/18


Keskaritah
14/9/18

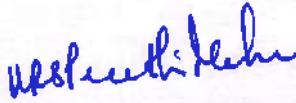
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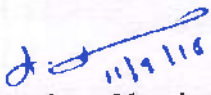
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Dr. S. Beer Mohamed
HoD - Chairperson


Dr. Srinivasan Sampath
Asst.Professor - Member


Dr. K. R. S. Preethi Meher
Asst.Professor - Member


Dr. S. Ramesh kumar
AR-Finance (i/c) - Finance Nominee


Shri R. Ramesh
Section Officer - Purchase Nominee



Dr. V. Gunasekaran
Asst.Professor - Member and Convener


11/9/2018

CENTRAL UNIVERSITY OF TAMIL NADU

PRE-BID MEETING FOR TENDER NO.12/2018-19, TOWARDS SUPPLY & INSTALLATION OF 3-ZONE TUBE FURNACE FOR DEPARTMENT OF MATERIALS SCIENCE, HELD ON 21.08.2018 AT 11:00 AM F1-02, CONFERENCE HALL, ADMINISTRATIVE BUILDING, CUTN - THIRUVARUR.

ATTENDANCE SHEET

Sl. No.	Name & Designation	Company Name & Address	Contact Number	Signature
1.	M. HARITHARAN ASSJ. MANAGER	THE PRECISION SOL. W. THIRUVARUR.	97866 75632	
2.	ANKUR SINGH MANAGER BUSINESS DEV. ankur@uhptech.com	UHP TECHNOLOGIES	9900058774	
3.				
4.				
5.				

Technical Specification (Revised)

Annexure - II

3-Zone Type Tube Furnace for Chemical Vapour Deposition with mass flow controllers, vacuum pump

1. 3- Zone Type Tube Furnace:	
Display	7" LCD Touch Screen
Chamber	Split type and upper part can be opened.
Max. Temperature	1200°C or better
Continuous Working Temp.	1150°C or better
Heating Rate	0~10°C /min (max. 20°C/min)
Temperature Zone	3 Zone (200*200*200mm)
Heating zone	200 mm (constant temp zone 150mm)
Heating Element	Resistance Wire With Mo
Thermocouple	K type
Temperature Control Accuracy	±1°C
Tube Size	80 x 1300mm (OD x minimum L)
Material:	Quartz
temperature Control	PID automatic control via SCR power control
Heating curves	30 steps programmable
Vacuum Flange	Stainless Steel vacuum flange with valve
Power	220V, 50/60HZ Hz. 6KW

2. Mass Flow Meter and Controllers

- The system should be provided with 2 nos. of Mass Flow Controllers calibrated for Argon & Methane for the range of 0 – 200sccm with digital display.
- The gas feeding line should be provided with SS line with necessary couplings.
- All SS lines should be electro-polished internally and all joints should be face sealed (VCR) type.
- Isolation valves should be provided as diaphragm valves with face sealed end connections.
- Gases will be fed to the chamber through MFC with isolation valve for deposition purposes.

2. Vacuum pump system:

This system should consists of RV Pump (Roughing Pump): 250 lit/min and,

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- Motor rating: ½ HP or better
- Rotational speed: 1400 or better
- Max. Nominal power rating (KW) : 0.37 or better
- Base fixing hole Pitch: 225×98

4. Pirani Gauge:

- Analog Pirani Gauge should be provided with sensors, to measure the vacuum in the range of 0.5 mbar to 10^{-3} mbar.
- Range of Vacuum: 0.5 to 10^{-3} mbar.
- No. of ranges: Single.
- No. of gauge heads: Two (selectable by a front panel switch)
- Two Pirani gauge heads
- Analog output: 100mV
- Material of construction: Aluminium, tungsten, glass to metal seal.

Essential requirements

This system should supply along with the gas leak detectors for CH₄, C₂H₆, H₂ gases as safety system.

Optional Accessories

1. Water cooling flanges at the end of the quartz tube.
2. Quartz boat and quartz rod to place the substrate.
3. Dry bed scrubber for vent gas.
4. House the system in an enclosure with proper exhaust system connected to blower with necessary interlocks.
5. Gas purifier for CH₄ and Ar to achieve better gas/precursors purity and better growth of material on substrate.

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6. Control systems:

- Computer control system with Graphical User interface for complete process-related controls such as vacuum level, gas flow rates, gas pressure, process temperature, voltage and current.
- User interface: Fully computer controlled system with window based software for operating the microscope along with keyboard, mouse, control panel including multifunction for control.
- Software should have provision for Manual settings, automated experiment programming, Real time instrument read-out, Alarm display, administration management.
- Preprogramed settings for SW/MW CNT's, Graphene and oxide nanowires (optional) etc.
- Other displays/controls such as those for gas leak detectors, Bubbler, status of safety valves, alarms, interlocks etc., process deviation etc. should also be provided on the control panel.

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