

PONDICHERRY UNIVERSITY

R.V.Nagar, Kalapet, Puducherry- 605014

Tender Notification

Sub: Pondicherry University- Supply & Installation of following equipments under Department of Science and Technology –Materials for Energy Storage (DST-MES) funded project -Sealed Quotations called for – reg.

Sealed quotation are invited from reputed manufacturers / authorized dealers of reputed manufacturers for Supply & Installation of following equipments as per following specifications

LIST OF EQUIPMENTS:

Sr.No	Name of the equipment	Quantity
1.	Horizontal Single Zone Tubular Furnace (IMPORTED)	1
2.	Bench Top Planetary Ball Mill (IMPORTED)	1
3.	Bench Top Non Refrigerated Centrifuge (IMPORTED)	1
4.	Ultra Pure Lab Water Purification System – (Tap water Feed) (IMPORTED)	1

1. Specifications for Horizontal Single Zone Tubular Furnace (IMPORTED)

Furnace design:	Simple and economical design tube furnace for use without the need to purchase an accessory work tube. Tubular furnace designed with wire element that is wound directly onto a fixed diameter integral ceramic work tube. Horizontal configuration with single heating zone mounted on control module
Dimensions:	Fixed tube inner diameter (mm) :65 Heated tube length (mm): 550 External H x W x D (mm): 530 x 625 x 360 Furnace body length (mm) :600 & weight:25 kg
Temperature:	Maximum continuous operating temperature:1100 ⁰ C and Maximum temperature: 1200 ⁰ C.
Insulation:	Ceramic fibre insulation/ low thermal mass insulation for improving heat-up rate
Surface casing:	Mesh guard surrounds furnace case to maintain lower temperatures on external surface
Heat up time:	≤ 45 minutes.

Work tube for use in air:	Integral ceramic work tube with element winding serves as a furnace chamber to process in air.
Additional work tube for inert gas use:	<p>Separate work tube to process with inert gas atmosphere with following items.</p> <ul style="list-style-type: none"> ● IAP (Impervious Aluminous Porcelain) material work tube with 60 mm outer diameter, 50 mm inner diameter & 900 mm length. ● Insulation plugs suitable for horizontal or vertical use: <ul style="list-style-type: none"> 1 x standard, 1 x thermocouple access slot ● Work tube end seals: <ul style="list-style-type: none"> 1 x gas inlet / outlet pipe, thermocouple gland ● Probe thermocouple access up to 1200°C: Probe thermocouple gland complete with type N thermocouple.
Programmable temperature controller:	Eurotherm Programmable Temperature Controller with one program consisting 8 segment pairs. Each segment having one ramp & dwell.
Gas flow meter & solenoid valve:	<p>100mm Flow meter for tube furnace operation with end seals for purging Ar with flow rate of 2-22 l/min.</p> <p>Solenoid valve with manual switch to be offered.</p>
Temperature uniformity:	<p>At 550°C:</p> <p>Temperature uniformity of $\pm 2.5^{\circ}\text{C}$ at length of 140 mm or more. Temperature uniformity of $\pm 5^{\circ}\text{C}$ at length of 180 mm or more. Temperature uniformity of $\pm 10^{\circ}\text{C}$ at length of 270 mm or more.</p> <p>At 750°C:</p> <p>Temperature uniformity of $\pm 2.5^{\circ}\text{C}$ at length of 160 mm or more. Temperature uniformity of $\pm 5^{\circ}\text{C}$ at length of 215 mm or more. Temperature uniformity of $\pm 10^{\circ}\text{C}$ at length of 285 mm or more.</p> <p>At 1100°C:</p> <p>Temperature uniformity of $\pm 2.5^{\circ}\text{C}$ at length of 170 mm or more. Temperature uniformity of $\pm 5^{\circ}\text{C}$ at length of 240 mm or more. Temperature uniformity of $\pm 10^{\circ}\text{C}$ at length of 320 mm or more.</p>
Max power (W):	Single Phase ≤ 2000 W
Thermocouple:	Type N thermocouple located between the chamber work tube and heating element for precise temperature control and easy replacement.
Acceptance criteria :	Furnace having temperature uniformity as per data at S.No.10

2. Specifications for Bench Top Planetary Ball Mill (IMPORTED)

The Planetary ball mill should be capable of grinding (or Pulverizing, mixing, homogenizing, colloidal high energy milling, mechanical alloying) Soft, hard, medium-hard, brittle, fibrous, tough and moist materials in vertical axis.

Specifications with required features:

1. Grinding station should be of **single stage** with two stacking bowls facility.
2. The speed ratio should be in the range of 1: -2.
3. Grinding environment must have the capability of operating in both dry and wet Conditions with inert gas environment too.
4. Feed Size should not exceed 10 mm.
5. Final fineness should be less than 1 μm for dry grinding & less than 0.1 μm for colloidal grinding.
6. Sample quantity range should be 10 ml minimum and 220 ml maximum.
7. Effective diameter of main disk should be in the range of > 135 mm
8. Rotational Speed of Main disk should be 650 rpm and more.
9. Centrifugal force should be in the range of (>30) x acceleration of gravity.
10. Motor Drive and Power Should be a 3-phase asynchronous motor with frequency converter and the power should 750 - 1200 W.
11. Grinding jar made of Tungsten carbide 50ml or 80 ml volume –each 2 nos. and Stainless Steel (SS) with 12ml, 25ml, 50 ml or 80 ml volume –each 1 no.
12. Grinding balls should provide of Tungsten Carbide 10 mm size – 20 numbers, and 5 mm size- 200 pcs; & S.S balls 10 mm size – 20 numbers, and 5 mm size- 200 pcs.
13. Programmable microprocessor controller should have the facility of programming with programmable interval, Pause time and reverse direction (00:00:01 sec to 99:59:59 hr: min: sec).
14. Electrical Supply Should be single Phase, 230 V, 50- 60 Hz with power consumption not exceeding 1250 W.
15. Net weight should not exceed 90 Kg
16. For wet Grinding the safety closer should be quoted so that during milling sample should not spill out.
17. **Salient Features** should be additional Safety Lock, Safety Slider for safe operation, Gentle grinding in centrifugal mode, Power failure backup that ensures storage of remaining grinding time, Electricity saving mode, Contamination free grinding.
18. Wide range of materials for contamination free grinding, Powerful and quick grinding down to nano range and perfect stability on lab bench
19. Innovative counter weight and imbalance sensor for unsupervised operation

20. Gentle grinding in centrifugal mode and comfortable parameter setting via display and ergonomic 1-button operation, Programmable starting time and automatic grinding chamber ventilation
22. Power failure backup should ensure storage of remaining grinding time, Grinding with up to 33.3 x acceleration of gravity, Reproducible results due to energy and speed control,
23. Should be suitable for long-term trials and continuous use, Measurement of energy input

3. Bench Top Non-Refrigerated Centrifuge (IMPORTED)

Features and Function

- Brushless induction drive
- Microprocessor control
- Active imbalance detection and cut-off
- Motor driven lid lock
- Automatic rotor identification system with over speed protection
- Audible signal at the end of each run
- Emergency lid lock
- Stainless steel chamber
- Autoclavable rotors

Display Functions

- Diagnostic program
- Program memory for 99 programs
- Quick-key for short runs
- 10 acceleration and 10 deceleration rates, possibility of non-breakable deceleration
- Permanent indication of pre-set and actual values
- Pre-selection of speed or RCF in steps of 50/10-er
- Pre-selection of running time from 10 seconds to 99 hours 59 minutes or continuous
- Simple one handed operation

Specifications

Max. Speed	: 16000 rpm
Max. RCF	: 24325 x g
Max. Volume	: 4 x 750 ml
Speed range	: 200 - 16000 rpm
Running time	: 59 min 50 s / 10 s increments 99 h 59 min / 1 min increments
Dimensions (WxHxD)	: 54 cm x 39 cm x 67 cm
Weight	: 79 kg

Rotors

Angle rotor, 6 X 50 ml tubes	: 1 No.
Round bottom for max. 50 ml	: 6 nos.
Max. Speed	: 13000 rpm
Max. RCF	: 13522 x g
Max. Radius	: 8.4 cm

4. Specifications for Ultra Pure Lab Water Purification System – (Tap water Feed) (Imported)

Single table-top water purification system should be capable of producing **Type I** and **Type III** water with the help of Pretreatment module, RO-Membrane, built in Storage tank, Polishing module

- Vendors should provide the external RO system to remove salt and heavy dust particles in feed water.
- **Pre-filtration System:** Three stage pretreatment system with 10, 5 & 1 micron spun filters for removal of suspended particles and to take care of F.I. in water.
- Microprocessor - controlled Management Systems for continuous monitoring of water purity
- System should produce 10 Litres or above per day of ultrapure water.
- It should have a dispense rate of up to 2L/min.
- Should produce Ultra-Pure water (**Type I**) from tap water: Output Water Quality should be with Resistivity of 18.2MΩ-cm (Conductivity 0.055µs/cm) at room temperature, TOC: 1-5 ppb, Bacteria: <1 CFU/ml, Endotoxin < 0.001 EU/ml, RNase < 0.002 ng/ml, DNase < 20 pg/ml, pH: Effectively Neutral
- The system should display conductivity, resistivity, TOC, Temperature and water level in the tank.
- System should have auto volume dispensing
- Should be possible to draw **Type III** water from the tank
- Should have separate pre-treatment, separate R.O, D.I, and dual wavelength 185/254 UV lamp in a single unit.

- It should have recirculation facility to maintain consistent peak water purity.
- It should have 5 liters or more integrated tank.
- Instrument should show water volume in reservoir graphically and in percentage.
- It should have dual wavelength UV (185/254 nm)
- Three years warranty for RO Membrane.
- At the point of dispenser POU filter should be available for Dnase/Rnase free water. It should be removable when not in use.

Warranty: System should have **three years** unconditional warranty for complete maintenance free operation.

TERMS AND CONDITIONS

I. General Information:

- a) Last date and time of receipt of the Quotations: February 23rd, 2018, 3.30 PM
- b) Date and Time of Opening of the Quotations: February 23rd, 2018, 3.30 PM
- d) Quotation / Tender Document fee: Rs. 500/-
- e) EMD rates: 2.5% of the quoted price for each equipment.
- f) **Two bid systems have to be strictly followed.** One for Technical bid and another for commercial bid and each bid should be submitted in separate sealed covers.
- g) However, the tender document fee and EMD as specified above should be remitted by each firm/bidder, collectively for all their bids advertised under this tender.
- h) Quoting merely the lowest price does not confer any right to any bidder for award of supply order. The University's Purchase Committee, reserves the right to select the equipment any bid under the grounds of specification compliance, technologically advanced quality, proven performance track record, brand reputation, service backup support & training, offer of additional / special features, compatibility with the existing System, etc.
- i) The Tender Document Fee and EMD should be submitted in a separate cover superscribing **Bank Demand Draft** and **which should be enclosed with the technical bid.**
- j). The Photo Copies of the Bank Instruments on payment of EMD should be attached with each bidding covers.
- k) The tender / quotation must be submitted along with the stipulated tender document fee and EMD in the sealed cover, super-scribing the name of the Department / Centre for whose equipments the tender is quoted for.
- l) The cover should also contain the information like, Name of the Equipment and Serial Number of Equipments for which the bids are submitted. The name and address of the bidder should also be mentioned at the from address space.

m) The tenders should be addressed to the Principal Investigator, Pondicherry University.

The examples for super-scribing the envelopes of the different categories of tenders are given below:

Tender submitted under two bid system for the <u>Centre for Nanoscience and Technology</u>	
Name of the Equipment: _____	To
	Dr. A. Vadivel Murugan Associate Professor, Principal Investigator (DST-MES), Centre for Nanoscience and Technology, Pondicherry University, R.V. Nagar, Kalapet, Puducherry – 605014.
From Supplier's Address	

In case of local delivery, all tenders are to be dropped in the tender box placed at the Information Facilitation Counter, Bharat Ratna Dr. B. R. Ambedkar Administrative Block, Pondicherry University, R.V. Nagar, Kalapet, Puducherry – 605 014.

n) Quotations will not be accepted through fax / e-mail.

II. Common Conditions (Import or Indigenous)

1. Purchase of Quotation Document:

The Quotation / Tender document can be downloaded from the University website www.pondiuni.edu.in or procured from the Pondicherry University on payment of fee as specified above, by means of a D.D, drawn in favor of **The Finance Officer, Pondicherry University, payable at Puducherry**. The downloaded application should be accompanied with the quotation document fee, in the form of a Demand Draft.

2. Price Schedule

The rates should be quoted for a single unit and also for the total quantity required by the University. The price should include the delivery, installation, training charges, etc. at the respective Department, Pondicherry University. The prices quoted shall remain firm until the equipment is supplied to the respective Department, Pondicherry University.

3. Quoting the Core price & Tax, Duties, Discount etc.

The taxes / duties / discounts, if applicable, are to be explicitly and separately shown in the bid.

4. Eligibility:

The firm must have the requisite domain expertise with regard to supply, installation and post sale service of the items they are quoting. The firm should have been in existence for at least six years as on the date of this quotation and must have executed at least three orders for this kind of equipment during the last three years. Company should be ISO certified. The firm should have not incurred any loss in the last three years.

5. Installation:

The engineer should install the equipment **free of cost** at the site. However, utilities like power, water, air etc. will be provided.

1. Delivery:

Within 3 months from the date of receipt of approved drawings.

5. Duty Exemption

The University has been granted the benefit of exemption from the payment of the Central Excise Duty and Customs Duty by the Department of Scientific and Industrial Research (DSIR), India, vide their Notification No.10/97 dt. 01-03-1997 and 51/96 dated 23.07.96 respectively, in respect of

- a) Scientific and technical instruments, apparatus, equipment, Software including computers.
- b) Accessories and spare parts of goods specified in (a) above and consumables.
- c) Computer software, compact disks, CD ROM, Recording magnetic tapes, microfilms, microchips etc.
- d) Prototypes.

Customs duties at Indian port, if any, will be to the account of the University.

6. WARRANTY:

- i) The equipments covered under the purchase order, when installed, shall be warranted for the quality, workmanship, trouble free operation and performance for a period of at **least 36 months** from the date of putting the system into operation at the Centre for Nanoscience and Technology, Pondicherry University, or at least 42 months from the date of receipt of the last lot of the consignment in India.
- ii) If any item covered under warranty fails, the same shall be replaced free of cost including all the applicable charges including shipping cost both ways.
- iii) Complete technical specifications to be included in the Technical bid.
- iv) The necessary service support should be provided by Bidder during the agreement period.
- v) The training should be provided by the supplying companies for a minimum period of two days from the date of installation with an expert team.
- vi) Technical post sale support by email and telephone will be provided during the period.
- vii) Operating Manual should be provided in English.

- viii) A clear statement regarding availability of after-sales service and availability of spare-parts for next 5 to 10 years should be included.
- ix) A recent customer list (within last five years) with contact details including email address is to be submitted with technical bids / bids as the case may be.
- x) If the equipment is proprietary a product, a proprietary product certificate should be enclosed.
- xi) The information pertaining to infrastructural, power and any other requirement for satisfactory installation and commissioning of the whole system must be provided by the bidder, at least 30 days in advance of the installation to be commenced if purchase order is issued.
- xii) The equipment must operate at 230V/50 Hz single phase and / or equivalent three phase electrical power.
- xiii) If the bidder is an authorized representative in India, they are requested to inform their technical ability to take care of the problems in the system, if developed later within the warranty and outside the warranty period. The responsibility of the Indian agent must be clearly specified.
- xiv) The bidder from abroad shall obtain, if required, export permission from the appropriate authorities in his country or the country of origin for items to be shipped to India in case of items to be imported. The University shall provide necessary information if required for this purpose.
- xv) The validity of the each quotation should be at least for SIX MONTHS from closing date.**
- xvi) The offers will not be considered if received after the bid closing date and time.
- xvii) The offers received through telex / telefax / e-mail will not be accepted by the University under any circumstances.
- xviii) The University shall not be responsible for any delay / loss or non-receipt of quotations by post / courier service.
- xix) No unsolicited correspondence shall be entertained after the submission of the offer.
- xx) If an order is placed with the firm, the purchase shall be governed by an agreement as per the University rules in force at the time.
- xxi) Additional terms and conditions will be incorporated in the purchase order, if needed, to safe guard the interests of the University.
- xxii) Quotation is not transferable.
- xxiii) In case of any dispute in respect of the quotation, all legal matters shall be instituted within the jurisdiction of the place where the purchaser ordinarily resides.

7. Power to reject the offer:

- i) Pondicherry University reserves the right to accept / reject any offer in full or in part or accept any offer other than the lowest offer without assigning any reason thereof. Any offer containing incorrect and incomplete information shall be liable for rejection.
- ii) No Agency commission will be paid to any authorized agent in India.
- iii) Liquidated damages: Timely supply of the ordered items, installation, commissioning (wherever is applicable) and training etc. is the essence of the contract. In case of failure to supply within the time specified in the Purchase order, a penalty / LD of 0.5% of the total value per week or a part thereof shall be levied subject to a maximum of 7.5% in respect of items which are not supplied. The decision of Pondicherry University shall be final in this regard.
- iv) Bidder(s) must be authorized business partners of Global / National service providers of the respective equipment.
- v) The Bidders must enclose authorization letter from the respective global / national service providers of the above equipments particularly mentioning an undertaking that in case of default by the Bidder, they (Global Service Provider) shall take over all the responsibilities of the Bidder.
- vi) The Bidder should not be involved in any Bankruptcy filing for protection from it.
- vii) The training should be provided by the supplying companies on the specimen and operation of the equipments for a minimum period of two weeks from the date of installation with an expert team.
- viii) For any clarification with respect to technical specifications, please contact the PI of the project as per the details given below: -

Sl. No.	Name of the Department/Centre	Name of the PI	Contact Details
01.	Centre for Nanoscience and Technology	Dr. A.Vadivel Murugan Associate Professor & PI	+91 9488566463

III. Specific Conditions for Imported Equipments

1. *Payment of EMD:*

The Quotation must be accompanied by EMD as stated above, by means of a Demand Draft, drawn in favor of ***The Finance Officer, Pondicherry University, payable at Puducherry.*** *The Small Scale units are exempted from payment of EMD provided they enclose the proof of their exemption Certificate issued by the competent authority.*

2. *Payments terms:*

- i) Normally a letter of Credit will be opened for 90% of CIP price, on receipt of order acknowledgement. However, 100% of the LC also be considered, if the supplier provide Bank Guarantee towards performance Security for the 10 % of the total cost of the equipment to cover the Warranty Period.
- ii) Bank charges in India shall be borne by the purchaser and outside India shall be borne by the contractor / supplier.

- iii) The offer must be in English. The rates should be indicated both in figures and words against item specified in the given table. It is preferable that the price be quoted in Rupees or in US Dollars or in major foreign currencies.
- iv) The total cost should be quoted for FOB as well as CIF – Pondicherry University.
- v) However, the price quoted under FOB or should also include the following cost if they are required during the initial stage:
 - a) Local freight / insurance for Chennai airport to University laboratory.
 - b) Installation cost if any.
 - c) Cost of consumables which are required for the equipment for initial operation upto a reasonable time.
- vi) In case of the Principal supplier of foreign country unable to meet the conditions stated at para no.4, the local agent / dealer should fulfill the above said conditions in respect of Local Insurance, Freight, safety transport and installation, etc.
- vii) The bidder from within India shall obtain the requisite approval for Imports etc., if required.
