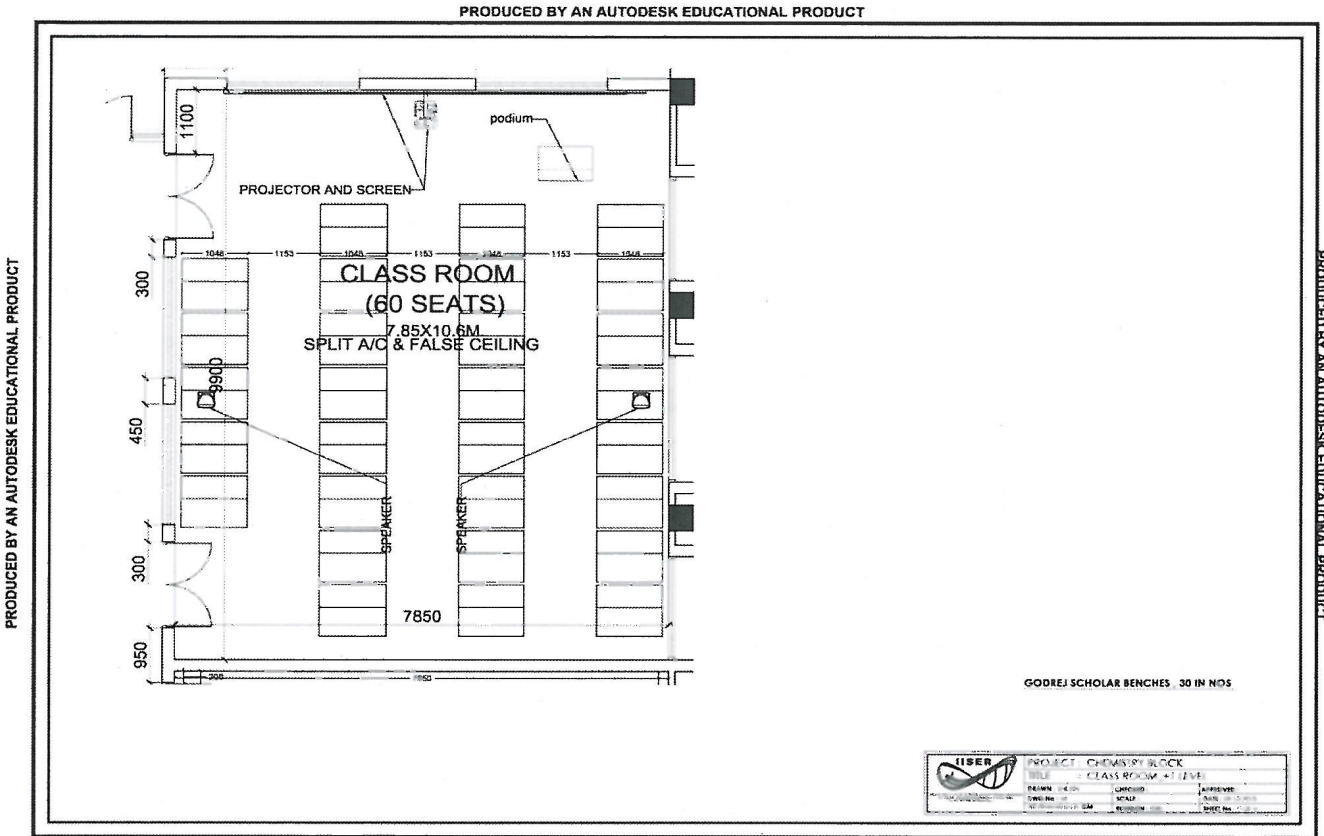


**Appendix E**

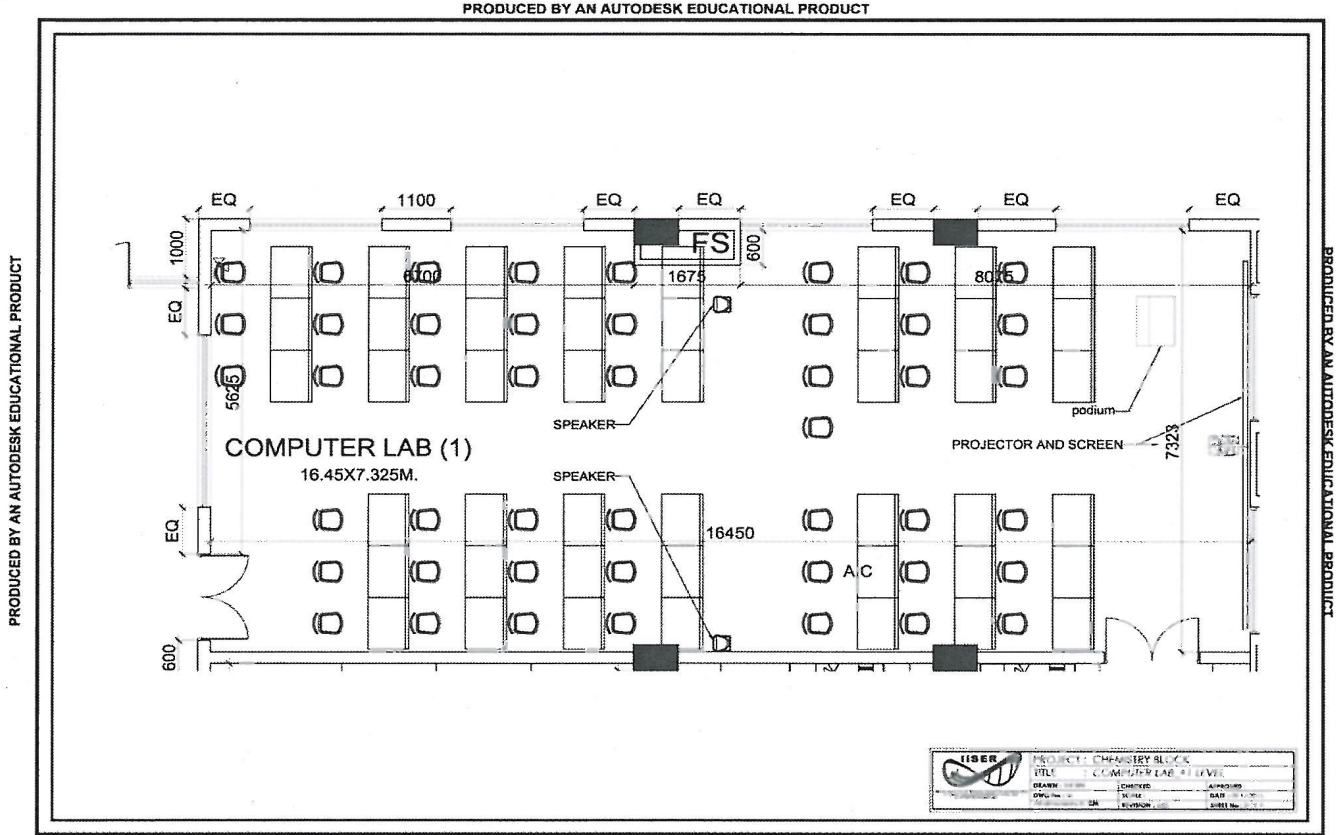
**60 seat class room**



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उप कुलसचिव [क्रय एवं भंडार]  
Deputy Registrar [Purchase & Stores]  
भारतीय विज्ञान शिक्षा एवं अनुसंधान संस्थान, तिरुवनन्तपुरम  
Indian Institute of Science Education and Research Thiruvananthapuram  
सी.ई.टी. कैम्पस, इंजीनियरिंग कॉलेज रो.  
CET Campus, Engg. College RO.  
तिरुवनन्तपुरम / Thiruvananthapuram-695 016

Appendix F

54 seat computer lab

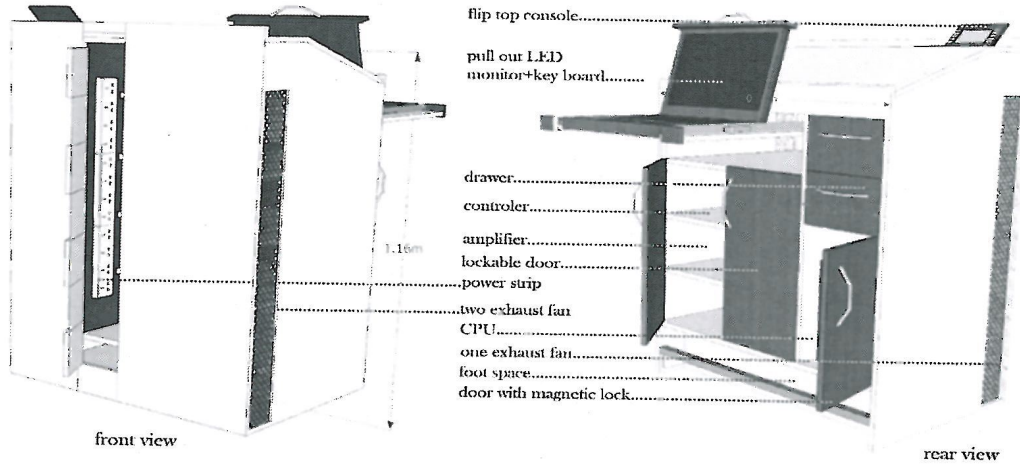


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**Appendix G**

**Console table**



**के. भास्कर राव / K. BHASKARA RAO**

उप कुलसचिव [ क्रय एवं भंडार ]

Deputy Registrar [Purchase & Stores]

भारतीय विज्ञान शिक्षा एवं अनुसंधान संस्थान तिरुवनन्तपुरम  
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**III. RHEOMETER WITH ACCESSORIES- 1 No**

1. IFT No. : IISER/PUR/6517/15  
 2. DUE DATE : 21<sup>st</sup> April 2016 [4 PM]  
 3. DATE OF OPENING OF TECHNICAL BID : 22<sup>nd</sup> April 2016 [3 PM]  
 4. DATE OF OPENING OF PRICE BID : Will be notified later.  
 5. COST OF TENDER# : Rs. 500 + 5% VAT  
 6. EMD [BID SECURITY] \*\* : Rs. 1,70,000/-

**UNIVERSAL RHEOMETER SYSTEM****MAIN INSTRUMENT**

MEASURING HEAD TYPE	A/c or D/c Type
TORQUE RANGE	0.5nNm to 200mNm OR BETTER
MOTOR BEARING	DUAL AIR BEARING
SPEED RANGE	10E-7 to 300 rad/s OR BETTER
MOTOR CONTROL	DIGITAL CURRENT SOURCE WITH HIGH SPEED DIGITAL SIGNAL PROCESSING
FREQUENCY RANGE	10E-7to 600 rad/s OR BETTER
STRAIN SENSOR	HIGH RESOLUTION OPTICAL ENCODER
MODES	DIRECT STRAIN AMPLITUDE AND DIRECT STRESS AMPLITUDE
MEASUREMENT TYPES	ROTATIONAL , OSCILLATORY & TRANSIENT
OSCILLATORY MODES	DIRECT STRAIN AMPLITUDE & CONTROL STRESS
NORMAL FORCE	0.05 to 50N OR BETTER
GAP CONTROL (STANDARD)	AUTOMATIC GAP COMPENSATION
MEASURING SYSTEM CONNECTION	SCREWLESS QUICK FITTING WITH WIRELESS AUTOMATIC IDENTIFICATION OF MEASURING GEOMETRIES
SAMPLE LOADING	AUTOMATED ELECTRONIC TRIMLOCK DURING SAMPLE LOADING AND SAMPLE TRIMMING
PC INTERFACES	DIRECT USB INTEFACE, ETHERNET AND SERIAL INTERFACE

**INTERFACIAL RHEOLOGY SYSTEM**

INTERFACIAL MEASURING SYSTEMS	INTERFACIAL RHEOLOGY CELL WITH GLASS CYLINDER MEASURING SYSTEM: BICONE GEOMETRY SOFTWARE: AUTOMATIC MEASUREMENT OF INTERFACIAL MODULI AND VISCOSITY TEMPERATURE RANGE FOR INTERFACIAL RHEOLOGY: 5 TO 70 DEGC PELTIER TEMPERATURE CONTROLLER: -20C TO 200C PELTIER DEVICE. (THIS TEMPERATURE CONTROLLER IS TO BE USED WITH PARALELL PLATES/CONE & PLATES MEASURING GEOMETRIES ALSO)
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**RHEO-OPTICS : RHEOMICROSCOPY**


TEMPERATURE CONTROL	TRANSPARENT PELTIER PLATE SYSTEM FOR CONE/PLATE ( COMMON FOR RHEO-MICROSCOPE/RHEO-SALS/UV CURING
PELTIER TEMPERATURE RANGE	-10 TO 200C OR BETTER
MAX HEATING RATE	20 C/min OR BETTER
MAX COOLING RATE	18C/min OR BETTER
MICROSCOPE SETUP	BRIGHTFIELD SETUP WITH SAME SIDE ILLUMINATION
COOL SHADOW FRE ILLUMINATION, LAMP TYPE	150 WATT
LENSE SYSTEM	20X OBJECTIVE and 2X EYPIECE OR BETTER
DEPTH OF FOCUS	1.6 MICRO METER OR BETTER
CAPTURING/RECORDING CAMERA	1/3" CCD CAMERA, At least 15 frames/s
LIGHT SOURCE	COOL SHADOW FREE ILLUMINATION FROM 150W VISIBLE LIGHT SOURCE
	THE RHEOMETER SHOULD BE UPGRADABLE FOR SMALL ANGLE LIGHT SCATTERING SYSTEMS (SALS) USING THE SAME TEMPERATURE CONTROLLER & SOFTWARE. ANY SET-UP WITH DIGITAL MAGNIFICATION WILL NOT BE ACCEPTABLE.

#### SMALL ANGLE LIGHT SCATTERING SYSTEMS (SALS)

SALS SETUP	TRANSMISSION MODE SETUP WITH DIRECT TRANSFER OF SCATTERED INTENSITIES ON THE CCD CHIP
OPTICS	TELECENTRIC OPTICS FOR MINIMAL LOSS OF SCATTERED INTENSITY SIGNAL
SCATTERING ANGLE RANGE	1 TO 25 DEGREE
SCATTERING VECTOR RANGE	0.17 TO 4.17 1/MICRON
CAPTURING/RECORDING CAMERA	1/3" CCD CAMERA (COMMON WITH RHEO-MICROSCOPY)
LASER SOURCE	390 MICRO WATT LED AT 658nm WAVELENGTH
MEASURING SYSTEM	TRANSPARENT PARALLEL PLATE AND TRANSPARENT CONE
PELTIER TEMPERATURE CONTROLLER	-10 TO 200 DEG C (COMMON WITH RHEO-MICROSCOPY)
ANALYSIS SOFTWARE	REQUIRED ANALYSIS SOFTWARE FOR THE ANALYSIS OF SCATTERING PATTERN SHOULD BE QUOTED

**MEASURING SYSTEMS COMPATIBLE WITH PELTIER TEMPERATURE CONTROL , HIGH TEMPERATURE FURNACE AND HUMIDITY CONTROLLER. SOLVENT TRAP SHOULD INVARIABLY BE QUOTED .**

<b>SHEAR VISCOMETRY/RHEOLOGY</b>	PARALELL PLATE with DIAMETER 25MM -01 NO. PARALELL PLATE with DIAMETER 50 MM -01 NO. CONE WITH 25 MM DIA WITH 2 DEG ANGLE -01 NO. CONE WITH 50 MM DIA & 1 DEG ANGLE-01NO. PROFILED UPPER & LOWER PLATES WITH DIAMETER:25MM (ONE EACH) <b>DISPOSABLE MEASURING GEOMETRIES :</b>
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	<p>PARALELL PLATE with DIAMETER 25MM -50 NO.                  LOWER PARALELL PLATE with DIAMETER 25MM -50 NO.                  LOWER PARALELL PLATE with DIAMETER 25MM -50 NO                  FIXTURE FOR DISPOSABLE DISHES-01NO.                  DISPOSABLE DISHES :50 NO.</p>
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**RHEOLOGY SOFTWARE**

ARCHITECHTURE	TEMPLATE BASED WITH ATLEAST 60 BUILT-IN TEMPLATES PRE-PROGRAMMED FOR ALL TYPES OF MATERIALS
ANALYSIS MODULES	INTEGRATED MODELLING/CURVE FITTING, RHEO-OPTICS ADAPTER MODULE, SQUEEZE FLOW RHEOLOGY AND EXTENSIONAL RHEOLOGY MODULES.
TESTING PROTOCOLS	<p>ROTATIONAL WITH RATE/CONTROL STRESS/COMBINATION OF CSR+CSS, OSCILLATORY WITH STRAIN / DIRECT STRAIN AMPLITUDE / CONTROL STRESS / COMBINATION OF TRUSTRAIN+CSS TRANSIENT WITH CREEP(SINGLE/MULTI-LEVEL)/STEP-STRAIN(STRESS RELAXATION) COMBINATION WITH ANY MODES ABOVE – FOR E.G. TRANSIENT+ROTATIONAL OR OSCILLATORY+ROTATIONAL ELASTIC (G'), LOSS (G''), COMPLEX MODULUS (G*), TAN <math>\delta</math> AS A FUNCTION OF TIME, TEMPERATURE, FREQUENCY, STRAIN AND STRESS IN SHEAR MODE.</p> <p>COMPLEX VISCOSITY AS A FUNCTION OF TIME, TEMPERATURE, FREQUENCY, STRAIN AND STRESS WINDUP TEST WITH PRESET WITH EXTENSIONAL RATE &amp; MEASUREMENT OF TENSILE STRAIN OR EXTENSIONAL VISCOSITY, FATIGUE TEST TEMPERATURE STABILITY, SHRINKAGE, ELONGATION, PHASE TRANSITIONS, SECONDARY RELAXATIONS &amp; BRITTLINESS OF COATED OR LAMINATED FILMS ELASTIC(E'), LOSS(E''), COMPLEX MODULUS(E*), TAN <math>\delta</math> AS A FUNCTION OF TIME, TEMPERATURE, FREQUENCY, STRAIN AND STRESS IN LINEAR MODE GLASS TRANSITION TEMPERATURE, ALPHA, BETA &amp; GAMMA TRANSITIONS, CRYSTALLINE TEMPERATURE VISCO-ELASTIC PROPERTIES IN VARIATION TO TEMPERATURE / MAGNETO SWEEP IN LINEAR RANGE</p>
SUPER-IMPOSED TESTING	STEADY SHEAR OVER OSCILLATORY SIMULTANEOUS OPERATION

**UTILITIES**

AIR COMPRESSOR	100PSI, 5CFM OILFREE
AIR DRYER	MULTISTAGE MEMBRANE TYPE WITH MICROFILTERS

Three Years Extended warranty should be quoted in the main quote.

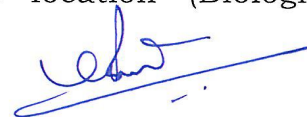
**IV. GROWTH CHAMBER TO BREED INSECTS- 4 NOS**

- |  |          |  |
|--|----------|--|
| <b>1. IFT No.</b>                          | <b>:</b> | <b>IISER/PUR/7334/15</b>                 |
| <b>2. DUE DATE</b>                         | <b>:</b> | <b>21<sup>st</sup> April 2016 [4 PM]</b> |
| <b>3. DATE OF OPENING OF TECHNICAL BID</b> | <b>:</b> | <b>22<sup>nd</sup> April 2016 [3 PM]</b> |
| <b>4. DATE OF OPENING OF PRICE BID</b>     | <b>:</b> | <b>Will be notified later.</b>           |
| <b>5. COST OF TENDER#</b>                  | <b>:</b> | <b>Rs. 500 + 5% VAT</b>                  |
| <b>6. EMD [BID SECURITY] **</b>            | <b>:</b> | <b>Rs. 1,28,000/-</b>                    |

**Specifications for Insect Growth Chambers**

A mobile growth chamber is needed to breed insects throughout the entire life cycle including mating. The growth chambers should meet the following minimum specifications. The tender documents should include the detailed technical product brochure

1. Temperature range: ca. 4 - 42 °C with lights on, with accuracy of +/- 0.5°C
2. Humidity: 50 to 95%, with accuracy of +/- 2%
3. Programs: Ramping and non-ramping programs.
4. Lighting:
  - a) Fullspectrum daylight mimicking lamps
  - b) Light intensity 20,000 lux
  - c) Uniform lighting from all directions
  - d) Adjustable intensity
  - e) Two vertical Light banks on the sides
5. Light banks should be separated by a barrier to minimize heat. The barrier should allow maximum light transmission while effectively minimizing heat. The material of this barrier should be clearly mentioned.
6. Adjustable shelf heights and at least 6 removable shelves.
7. Programmable circadian rhythm (day/night light regimes).
8. Phenolic coated coils.
9. Corrosion resistant interiors and exteriors (the material should be clearly mentioned in the offer).
10. Should have a future upgrade option of monitoring and controlling of chamber via internet
11. Control Panel should preferably have a touchscreen interface with access protected by password.
12. Audible alarms and visual indicators if temperature/humidity goes out of range. When the normal range is reached, the alarms should be turned off automatically.
13. User should preferably be able to set the threshold high and low temperature/humidity that sets off the alarm.
13. Roof mounted refrigeration system preferred
14. Working volume range: 800-1200 litres, but not less than 800 litres.
15. Warranty of three years, and an Annual Maintenance Contract (AMC) for a further 3 years. The AMC rates should be quoted separately.
16. Growth chambers will be initially installed in our transit location. The company should take responsibility for dismantling the growth chambers and reinstalling in the permanent location (Biological



Sciences Block, Vithura campus). **An undertaking should be provided by the company regarding this.**

17. The chamber should have a caster assembly, and should also preferably have adjustable legs.
18. Mention the minimum number of months needed to deliver the product. The speed of delivery may be taken in account when choosing the company.
19. Mention at least ten R&D laboratories/institutions in India where you have supplied growth chambers that are being used currently, with contact details of concerned person in each institute. We may contact and/or visit these institutes to assess the quality of your product.
20. External locking mechanism should be provided.
21. Suitable stabilizers for each machine should be provided.
22. If an external water storage container is needed, it should be included.
23. Data loggers should be provided for each machine. These data loggers should store temperature, humidity and light intensity, at a frequency of 30 minutes (or better) for a minimum of 6 months, and the data should be retrievable to a computer.
24. Compliance sheet for all specifications should be attached. Wherever relevant, the appropriate section/page number of the technical brochure should be cited.





## **TERMS&CONDITIONS**

- 1) **Bid with IFT No. & Item Name shall be quoted over cover**
- 2) All the correspondence in this regard should be done in favour of Deputy Registrar (Purchase & Stores), Indian Institute of Science Education & Research Thiruvananthapuram, CET Campus, Engineering College P.O, Trivandrum – 695016.
- 3) Instructions to Bidders [Annexure I] and General Terms and Conditions of the Contract [Annexure II] shall be followed.
- 4) # Tender cost in the form of DD favouring IISERTVM shall be sent along with 'Technical bid'.
- 5) \*\*Bid Security [refundable without any interest] shall be as per clause 1.15 of Annexure I and shall also be sent alongwith Technical bid. Incase the Bid security is provided by Bank Guarantee, specimen for the same is at Annexure IV.
- 6) Integrity Pact [Annexure III] shall be completed, signed, sealed and sent alongwith Technical Bid only for the Tender at Sl.No.1 of the INDEX.
- 7) **Clause 1.10[Bid Form] of Annexure I is not applicable for this Tender.**
- 8) **Tenders without Tender Cost, Integrity Pact [for Sl. No. I Index only]and Bid Security shall not be considered and summarily to be disqualified from participating tender.**
- 9) **Tender Opening:**  
All tenders will be opened at Pratheeksha Building. Authorized representatives of the bidders may attend the Tender Opening only **with authorization letters.**

### **TWO – PART TENDER**

#### **PART I – TECHNICAL BID:**

Consisting of all Technical details alongwith commercial terms and conditions. DD towards Tender Cost and Bid Security [EMD] signed shall be sent alongwith Technical bids, Clientele list and details of TWO major installations in India.

#### **PART II – PRICE BID:**

Showing item-wise prices for the items mentioned in the Technical Bid.  
**The technical bid and the Price bid should be in separate sealed and superscribed covers. Both these covers are to be put in a sealed bigger cover superscribing Tender No and due date.** Technical bids will be opened first and after evaluation, price bids of only the shortlisted bidders will be opened.

के. भास्कर राव / K. BHASKARA RAO  
उप कुलसचिव [क्रय एवं भंडार]  
Deputy Registrar [Purchase & Stores]  
भारतीय विज्ञान शिक्षा एवं अनुसंधान संस्थान तिरुवनन्तपुरम  
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CET Campus, Engg. College P.O.  
तिरुवनन्तपुरम / Thiruvananthapuram-695 016

  
DEPUTY REGISTRAR  
[PURCHASE & STORES]  
IISERTVM

**INSTRUCTIONS TO BIDDERS****1.1. ELIGIBLE BIDDERS.**

1.1.1 This Invitation for Bids is open to all suppliers.

1.1.2 Bidders should not be associated, or have been associated in the past, directly or indirectly, with a firm or any of its affiliates which have been engaged by the Purchaser to provide consulting services for the preparation of the design, specifications, and other documents to be used for the procurement of the goods to be purchased under this Invitation of Bids.

**1.2. COST OF BIDDING**

1.2.1 The Bidder shall bear all costs associated with the preparation and submission of its bid, and "the Purchaser", will in no case be responsible or liable for these costs, regardless of the conduct or outcome of the bidding process.

**1.3. FRAUD AND CORRUPTION:**

1.3.1 The purchaser requires that the bidders/suppliers and contractors observe the highest standard of ethics during the procurement and execution of such contracts.

1.3.2 The purchaser will reject a proposal for award if it determines that the Bidder recommended for award has, directly or through an agent, engaged in corrupt, fraudulent, collusive or coercive practices in competing for the Contract in question;  
The Bidding Documents

**1.4. COST OF BIDDING DOCUMENTS**

1.4.1 Interested eligible bidders may download the document from our Website. However the bid document cost to be paid during the submission of the bid.

**1.5. CONTENT OF BIDDING DOCUMENTS**

1.5.1 The goods required, bidding procedures and contract terms are prescribed in the bidding documents which should be read in conjunction.

1.5.2 The Bidder is expected to examine all instructions, forms, terms, and specifications in the bidding documents. **Failure to furnish all information required by the bidding documents or submission of a bid not substantially responsive to the bidding documents in every respect will be at the Bidder's risk and may result in rejection of its bid.**

**1.6. CLARIFICATION OF BIDDING DOCUMENTS**

1.6.1 A prospective Bidder requiring any clarification of the Bidding Documents shall contact the Purchaser in writing via fax/email. The Purchaser will respond in writing to any request for clarification, provided that such request is received not later than ten (10) days prior to the deadline for submission of bids. The Purchaser shall forward copies of its response to all those who have acquired the Bidding Documents directly from it, including a description of the inquiry but without identifying its source. Should the Purchaser deem it necessary to amend the Bidding Documents as a result of a clarification, it shall do so following the procedure under clause relating to amendment of Bidding Documents and Clause relating to Deadline for Submission of Bids. The clarifications and amendments issued would also be hosted on the website of the purchaser for the benefit of the other prospective bidders.

**1.7. AMENDMENT OF BIDDING DOCUMENTS**

1.7.1 At any time prior to the deadline for submission of bids, the Purchaser may, for any reason, whether at its own initiative or in response to a clarification requested by a prospective bidder, modify the bidding documents by amendment.

1.7.2 All prospective bidders who have received the bidding documents will be

notified of the amendment in writing or by e-mail and will be binding on them. The same would also be hosted on the website of the purchaser and all prospective bidders are expected to surf the website before submitting their bids to take cognizance of the amendments.

1.7.3 In order to allow prospective bidders reasonable time to take the amendment into account, while in preparing their bids, the Purchaser, at its discretion, may extend the deadline for the submission of bids and host the changes on the website of the purchaser.

1.7.4 In case of any amendment to the bid, it will be done at least 7 days before due date and will be published in website. Bidders are required to keep this in view before submission. Normally extension of due date will not be entertained. However in special cases if due date is extended, it will be notified under the same tender notice before 3 days of due date.

### **PREPARATION OF BIDS**

#### **1.8. LANGUAGE OF BID**

1.8.1 The bid prepared by the Bidder, as well as all correspondence and documents relating to the bid exchanged by the Bidder and the Purchaser, shall be written in English language only especially when the details are technical.

However if GOI makes it mandatory under Rajbhasha Abhinyam in that case views of Rajbhasha unit of IISER-TVM may be sought.

1.8.2 The Supplier shall bear all costs of translation, if any, to the English language and all risks of the accuracy of such translation, for documents provided by the Supplier.

#### **1.9. DOCUMENTS COMPRISING THE BID**

1.9.1 The bid prepared by the Bidder shall include:

- a) Bidder Information
- b) Bid security as specified in the Invitation to Bids.
- c) Service support details
- d) Deviation Statement if any.
- e) Performance Statement.
- f) Manufacturer's Authorization.
- g) Documentary evidence establishing that the bidder is eligible to bid and is qualified to perform the contract if its bid is accepted.
- h) Bid form.
- i) Documents establishing goods eligibility and conformity to bidding documents.
- j) Applicable Price Schedule Form.
- k) DGS&D Registration certificate in case the items under procurement falls under the restricted category of the current export-import policy of the Govt. of India.

#### **1.10. BID FORM AND PRICE SCHEDULE**

1.10.1 The bidder shall complete the Bid with the appropriate price schedule.

#### **1.11. BID PRICES**

1.11.1 The Bidder shall indicate on the appropriate price schedule, the unit prices and total bid prices of the goods it proposes to supply under the contract.

1.11.2 Prices indicated on the price-schedule form shall be entered separately in the following manner:

#### **(A) FOR GOODS MANUFACTURED WITHIN INDIA**

(i) The price of the goods quoted Ex-works including taxes already paid.

(ii) VAT and other taxes like excise duty etc [shall be shown extra] which will be payable on the goods if the contract is awarded.

