VEER SURENDRA SAI UNIVERSITY OF TECHNOLOGY: BURLA



P.O: Engineering College Burla (Siddhi Vihar), Dist: Sambalpur Odisha– 768018, India

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Ref: No: VSSUT/MME/8049/2016

Date:15/09/2016

TENDER CALL NOTICE

Sealed Bids (properly stitched separately) in two separate covers (**Technical Bid and Price Bid**) are invited by the **"The Registrar, Veer Surendra Sai University of Technology, Odisha"** from the manufacturers/authorized distributors/ dealers for supply of Instrument, equipment of reputed make (National/ International) for the Department of Metallurgical & Materials Engineering, VSSUT Burla, Odisha. The list of equipment and their technical specifications are mentioned below.

| Sl. | Description | Quantity | Remarks |
|-----|------------------------------------|----------|----------------|
| No | | | |
| 1. | Digital Calliper | 1 No. | Annexure -VI |
| 2. | Disc Pelletiser | 1 No. | Annexure -VII |
| 3. | Autoclave | 1 No. | Annexure -VIII |
| 4. | Hot Plate with Magnetic Stirrer | 3 No. | Annexure -IX |
| 5. | Distillation Set up with Condenser | 1 Nos. | Annexure -X |
| 6. | Rectifier | 1 No. | Annexure -XI |
| 7. | Multipurpose PH Meter | 1 No. | Annexure -XII |
| 8. | Flow Rate Meter | 1 No. | Annexure -XIII |
| 9. | Redwood Viscometer | 1 No. | Annexure -XIV |
| 10. | Pensky Martin Apparatus | 1 No. | Annexure -XV |
| 11. | Muffle Furnace | 1 No. | Annexure -XVI |
| 12. | Hydraulic Kbr Press | 1 No. | Annexure -XVII |

The list of Equipment

The Bidders may download the **Tender Documents** directly from the website available at **http://www.vssut.ac.in** and the Tender cost fee of Rs.1000/- (Non-refundable) by way of separate Demand Draft drawn in favour of **"The Registrar, Veer Surendra Sai University of**

Technology, Burla" payable at SBI, Burla should be enclosed along with the Bid. The Tender cost fee and the EMD amount should be submitted separately in separate demand drafts. In case of any bid clarification, responsibility lies with the bidders to collect the same from the website and the purchaser shall have no responsibility for any delay/ omission on part of the bidder.

TIME SCHEDULE:

a) Price of bidding document: Rs.1000/- (Non-refundable)

- b) Date of commencement of downloading bidding document 15.09.2016 at 11.00 AM
- c) Last date and time for Receipt of bids 06.10.2016 up to 12 noon
- d) Time and date of opening of Tender & technical bid 18.10.2016 at 11.30 AM
- e) place of opening of tender and address for communication and receipt of bid documents

THE REGISTRAR VEER SURENDRA SAI UNIVERSITY OF TECHNLOGY, ODISHA At- Burla, Po-Burla Engineering College, Dist-Sambalpur-768018, Tel. No-0663-2430211 Fax No-0663–2430204



REGISTRAR VSSUT Burla

GENERAL TERMS AND CONDITIONS

GENERAL TERMS & CONDITIONS OF CONTRACT FOR SUPPLY, INSTALLATION AND DEMONSTRATION OF THE INSTRUMENTS, EQUIPMENT REQUIRED FOR DEPARTMENT OF METALLURGICAL & MATERIALS ENGINEERING, VSSUT, BURLA, ODISHA.

1. Document Establishing Bidder's Eligibility & Qualification

The Bidders shall furnish as part of the Bid the following Documents establishing Bidder's eligibility and qualification to the Purchaser's satisfaction.

- 1.1 Manufacturer / Authorized Distributor / Dealer having valid license / certificates for the quoted item and the direct Importers holding valid Import License Manufacturer / Authorized Distributor / Dealer of the product are eligible to participate in the Bid.
- 1.2 Bidders should have **ISI or equivalent** certification for quoted instruments and equipment. However, the Purchaser shall have the right to consider the items where ISI or equivalent certification is not applicable.
- 1.3 The Bidder whether manufacturer/ distributor/ dealer must have experience of supply and installation of the quoted items in reputed Government Institutions / Public Undertakings / reputed Private Institutions within India during last preceding 3(Three) years reckoned from the date of bid opening and the details must be submitted along with documentary proof.
- 1.4 The Bidders shall have to produce document in support of their service associates nearest to Bhubaneswar/ Sambalpur, Odisha.
- 1.5 Bidder shall have to provide operational Training for instruments/equipment to one Official of each consignee at Suppliers Plant or Consignee site at least for 7 days whichever is suitable to Purchaser.
- 1.6 The Bidder shall quote items of one reputed Brand/model with all accessories in complete to perform functionality of Equipment/Machinery.
- 1.7 Manufacturer has to submit copy of Industry Registration of quoted products and Tax Registration Certificate issued from Competent authority. In case of Authorized Distributor / Dealer/Suppliers have to submit Manufacture authorization along with copy of above documents of Manufacture Industry.

2. Document Establishing Goods Eligibility

The instruments and equipment offered against the schedule of requirement of instruments, equipment should be in accordance with the stipulated specifications and of one reputed brand/model

- 2.1 The documentary evidence establishing the brand and the model may be in the form of literature, pamphlets, manuals, drawing, circuit diagram etc.
- 2.2 Detailed description of instruments and equipment with essential technical and performance characteristics may also be furnished.
- 2.3 The Bidders should clearly mention in their bid regarding the compatibility of the various equipment or the individual units.
- 2.4 The quantity shown in the bid can be increased or decreased to any extent depending upon the actual requirement.
- 2.5 The instruments and equipment should have testing certificate for its satisfactory functioning.

3. Technical Bid (COVER - A)

The following document should be submitted in Cover-A.

- 3.1 Earnest Money Deposit
- 3.2 Technical details of the equipment and machineries as per Annexure-V
- 3.3 Copy of the manufacturing license/ import license/ Authorized Distributor/ Dealer certificates
- 3.4 Copy of the authorization from the Manufacturing Company in case of Authorized Distributor /Dealer.in Annexure-III along with Manufacturer Industry Registration and Tax Registration Certificate.
- 3.5 VAT/ST clearance certificate up to **date** where applicable.
- 3.6 Performance/ Market standing certificate establishing that the Bidders have executed supply of similar items as mentioned in Schedule of Requirement of instruments and equipment to different Govt. Organizations/ Government PSUs / reputed Private Institutions. (proof of documents)
- 3.7 Copy of the IT PAN Card.
- 3.8 Detail name, address, telephone no. fax, e-mail of the firm and of the Director/ Managing Director/ Proprietor of the firm (As per Annexure IV)

- 3.9 Address, Telephone No., e-mail, Fax of the Branch Office/ Contact Person/ Liaisoning Office in Odisha. (As per **Annexure IV**)
- 3.10 Power of Attorney/ Authorization to a person for liaisoning and monitoring the business on behalf of the manufacturer / bidder but not entitled to raise the bills.
- 3.11 Document if any to establish the reorganization of the manufacturing unit in respect of ISO or equivalent.
- 3.12 The original bid document signed & sealed by authorized person in each page as a token of acceptance of all terms and conditions of the tender with original receipt.
- 3.13 Documentary evidence establishing that the instruments & equipment and ancillary services to be supplied by the Bidders shall confirm to the Bidding Document
- 3.14 Any deviation in the specification of the item including standard accessories / optional accessories in complete for functionality of Machine should be marked in **bold letters.**
- 3.15 Details of foundation drawing for instruments and equipment, if any, should be provided.
- 3.16 The details of the service station / service associates nearest to Bhubaneswar/Sambalpur shall have to be submitted to qualify in the technical bid.
- 3.17 Willingness to provide operational Training for Machineries to one Official of each consignee at Suppliers Plant or Consignee site **at least for 7 days whichever is suitable to Purchaser.**

4. Price Bid (COVER – B)

- 4.1 The hard copy of price bid giving the rates for various instruments & equipment and other items should be submitted along with sealed soft copy of price bid in Excel format through CD/Pen drive both in separate sealed cover here in after called Cover B (Price Bid). Price Bid (Cover B) of the bidders who qualify in Technical Bid (Cover A) will only be opened and will be communicated through E-mail/Fax.
- 4.2 The price of each item shall be quoted as per the prescribed Price Schedule Format at Annexure-I along with price break up of custom duty, Excise Duty, CST, Packing, Forwarding and Handling charges, Insurance charges, ET, freight up to destination including unloading, VAT, commissioning including testing and training with total price per item at FOR destination. The bidders are required to submit the individual price of each instrument(s) and equipment(s) as indicated in the schedule of requirements.

- 4.3 Each quoted item and all accessories should cover the warranty / guarantee for 2(two) year from the date of commissioning (Annexure-II).
- 4.4 The Cover B of the technically qualifying bidders shall be only opened at the Office of the "The Registrar, Veer Surendra Sai University of Technology, Burla" on the date and time to be communicated to them after technical evaluation of Cover A by E-mail/Fax.
- 4.5 The cost of standard accessories shall be included in basic price and optional accessories shall have to be quoted separately.
- 4.6 The bidders are required to submit the list of the spare parts required for the machine as well as the list of the dealers/ Distributors of the spare parts nearest to Bhubaneswar, Odisha for its availability.

5 BID CONDITIONS

- 5.1 The bidders should verify the sites of existing laboratories of Department of Metallurgical & Materials Engineering, VSSUT, Burla and the proposed lay out Plan indicating the location of each unit for necessary Technical Evaluation. The scope of Supply as mentioned in the schedule of requirements if not sufficient for full function of the Equipment/Machinery should be intimated in writing with the technical bid.
- 5.2 The quoted rate shall not vary with the quantum of order placed or destination point.
- 5.3 A copy of the original bid conditions and the schedules should be signed by the bidder at the bottom of each page with the office seal duly affixed and returned along with the bid. Bid schedule should be duly filled in with an **index** and **page number** for the documents, enclosures & EMD etc. **Paging** must be done for all the documents submitted.
- 5.4 Bids should be type written or Computerized and every correction/ over writing in the bid should invariably be attested with signature of the bidder with date before submission of the bids to the authorities concerned. No revision of price upward or downward will be allowed once the bid is opened. However, the purchaser shall have the right for considering the exchange rate of foreign currencies on verification of documents.

5.5 Language of Bid

The Bid prepared by the bidders and all correspondence and document relating to the bid exchanged by the Bidders and the *Purchaser*, shall be written in the English language. Supporting document and printed literature furnished by the Bidders may be written in another

language provided they are accompanied by an accurate translation of the relevant passages in the English language in which case, for purposes of interpretation of the Bid, the English translation shall govern.

5.6 Bid Price

- The contract shall be for the full quantity as described above. Corrections, if any, shall be made by crossing out, initialling, dating and re-writing.
- All duties, taxes, and other levies payable on the raw materials and components, job contract shall be included in the total price. VAT in connection with the sale shall be shown separately.
- The rates quoted by the bidders shall be fixed for the duration of the contract and shall not be subject to adjustment on any account.
- The price shall be quoted in Indian Rupees (Preferably).
- Prices will be quoted on F.O.B. destination as well as estimated CIP Burla basis for imported goods, Indian Agency commission/rebate payable to Indian Agent, if any, shall be shown separately and that will be payable in equivalent rupee directly to Indian Agent. The supplier shall be responsible to get the goods air freighted /sea freighted & air insured/marine insured up to the Institute.

5.7 VAT/ST clearance

Copies of valid VAT clearance Certificates shall be furnished by the Bidders and the originals of the above certificates shall be produced to the purchaser before placement of notification of award if asked for by the Purchaser.

5.8 EMD

All bidders are required to submit EMD not less than 1% of the quoted amount in shape of **Demand draft d**rawn in favour of **"The Registrar, Veer Surendra Sai University of Technology, Burla" payable at SBI, Burla** only. The EMD shall be in Indian Rupees.

NOTE: Non-submission of EMD or submission of less EMD than the desired one shall result in rejection of Bid. The EMD deposited against other Bids cannot be adjusted or considered for this Bid. No interest is payable on EMD.

5.9 SUBMISSION OF BIDS

Sealing and Marking of Bids

Bid should be submitted in two Bid system containing two parts as detailed below.

Sealed Cover-A: Technical Bid.

Sealed Cover-B: Price Bid (hardcopy & sealed soft copy in CD/pen drive)

Both the sealed envelopes should then be put in one outer cover and each cover should have the following indication:

i) Name of Dept.: _____

ii) Reference No of Bid _____

iii) Bid regarding _____

iv) Due date & time for submission of the Bid _____

v) Due date & time for opening of the Bid _____

vi) Name of the Firm _____

NOTE:

A. Bids submitted without following two Bid system procedures as mentioned above will be summarily rejected.

B. Please Note that **prices should not be indicated in the Technical Bid**. The Prequalification document including EMD as required in the Bid document should invariable be accompanied with the Technical Bid (**Cover A**).

The outer envelope shall indicate the name and address of the bidders to enable the bid to be returned unopened in case it is declared "late". If the cover containing the outer envelope is not sealed and marked as required, *Purchaser* will assume no responsibility for the bid's misplacement or premature opening.

The above procedure shall be adopted both for the Technical bid and price bid separately. Telex, cable, email or facsimile bids will be rejected.

5.10 Deadline for Submission of Bids

Bids must be received by the *Purchaser* at the address specified not later than the time and date specified in the Invitation of Bids. In the event of the specified date for the submission of bids being declared a holiday for the *Purchaser*, the bids will be received up to the appointed time on the next working day.

The *Purchaser* may, at its discretion, extend this deadline for submission of bids by amending the bid document, in which case all previous rights and obligations of the purchasers and bidders will remain same till the extended date.

5.11 Modification and Withdrawal of Bids

No Modification and Withdrawal of Bids is allowed between the interval of time of submission and the last date and time of the bids.

No bid may be withdrawn in the interval between the deadline for submission of bids and the expiration of the period of bid validity specified by the bidders on the bid form.

5.12 BID OPENING

- 5.13 The *Purchaser* will open all bids, in the presence of bidder's representatives who choose to attend at **11.30 AM on dated 18.10.2016** at the Office of the "The Registrar, Veer Surendra Sai University of Technology, Burla".
- 5.14 The bidder's representatives who are present shall sign a register evidencing their attendance. In the event of the specified date of bid opening being declared a holiday for the *Purchaser*, the bids shall be opened at the appointed time and location on the next working day.
- 5.15 The bidder's names, and the presence or absence of the requisite EMD and such other details as the *Purchaser*, at its discretion, may consider appropriate will be announced at the opening. No bid shall be rejected at bid opening, except for late bids, which shall be returned unopened to the bidders.

5.16 Acceptance of the Bid

- Bidders submitting bids would be considered who have considered and accepted all terms and conditions. No enquiries, verbal or written, shall be entertained in respect of acceptance or rejection of the bid.
- Genuine equipment and instrument etc. should be supplied. Bidders should indicate the source of supply i.e. name and address of the manufacturers from whom the items are to be sourced.
- Supply of equipment means Installation and Commissioning (except civil works), Demonstration as well as Training at site. No separate charges will be paid on this account.

5.17 Rejection of the Bid

The Bid document shall be out-rightly rejected under following stipulation and no correspondence will be entertained whatsoever.

- If the Bidders has not furnished the required Tender paper cost and EMD
- If the Bidders has not submitted the Price as per the prescribed format Annexure-I

- Manufacturing Authorization Annexure-III and in case of Authorized Distributor / Dealer/Suppliers have to submit Manufacture authorization along with copy of above documents of Manufacture Industry.
- If the bid is not supplemented with breakup of standard accessories / Optional accessories & cost of AMC separately for three years after completion of warranty period.
- Photo copy of the up-to-date valid manufacturing license/ import license (if it is imported) /dealership certificate/Distributor certificate of the product along with Tax Registration Certificate of Manufacturer issued from competent authority.
- If the bidders, whether manufacturer or authorized distributor/ dealer have not supplied the required quantity for qualification as per the eligibility criteria and not submitted the performance statement at **Annexure-IV with supporting documents.**
- If the quoted product of the bidders not confirms to technical specification with complete accessories for functional Equipment/Machinery and standard of workmanship required by the Purchaser.
- If the bidder has not furnished technical details of the equipment's with **one make & model** as per **Annexure-V**.
- If bidder will quote items of more than one make/model.
- If the bidder has not furnished detailed mandatory drawings, **catalogue**/, Foundation drawings & schedule of supply of items, if required.
- If the bidders have not agreed to give **bid validity**.

5.18 Purchaser's Right to Accept any Bid and to Reject any Bid

The Purchaser reserves the right to accept or reject any bid and to annul the bidding process and reject all the bids without assigning any reason thereof at any time prior to award of Contract, without thereby incurring any liability to the affected Bidders or Bidders on the grounds of such action of the purchaser. In case no bidder qualifies as per qualifying criteria and standards, purchaser may at his discretion relax qualification criteria for award of contract.

5.19 Evaluation and Comparison of Bids

The comparison shall be of FOR destination price basis including the price of all costs wherever applicable as well as duties and taxes (**but excluding VAT**) paid or payable on Machineries, instruments & equipment incorporated or to be incorporated in the items including the warrantee/guarantee period from the date of installation.

- The Purchaser's evaluation of a bid will take into account, in addition to the bid price and the price of incidental services.
- The purpose of bid evaluation is to determine substantially responsive bid with the lowest evaluated cost, but not necessarily the lowest submitted price, which should be recommended for award.
- Evaluation of bids should be made strictly in terms of the provisions in the bid document to ensure compliance with the commercial and technical aspects.
- The past performance of the suppliers will be taken into account while evaluating the bids.
- Cost of the inland transportation, insurance and other costs within the Purchaser's Country incidental to delivery of the goods to their final destination;
- Delivery schedule offered in the bid;
- Deviations in payment schedule from that specified in the General Terms & Conditions of Contract;
- The availability in the Purchaser's country of spare parts and after-sales services for the goods offered in the bid;
- The projected operating and maintenance costs during the life of the equipment/ goods.
- The performance and productivity of the equipment/ goods offered;
- The quality and adaptability of the equipment/ goods offered.
- Any other point as deemed proper to be incorporated by the evaluation committee.
- Alternative options of offer shall not be allowed.
- Each Bidder shall submit only one quotation with one make & model.
- The quotation would be evaluated separately for each item
- Sales Tax in connection with sale of goods shall not be taken into account in evaluation.
- Negotiation shall be made with the lowest evaluated bidder.
- Lowest evaluated price shall be taken in to consideration, but not the lowest quoted price.
- Willingness to provide operational Training to one Official of each consignee at consignee site for at least **7 days whichever is suitable to Purchaser.**

6.0 Supply Conditions

6.1 Delivery of Goods

The delivery of goods shall be made by the supplier to the Consignee in accordance to the order placed as shall be detailed in the Schedule of requirements & technical specifications.

6.2 Instruments, Equipment Demonstration cum Inspection

Purchaser reserves the right to ask for demonstration cum inspection of the instruments & equipment where ever applicable.

6.3 Inspection/ Test/Training

The supplier shall get each equipment inspected in manufacturer's works and submit a test certificate (New & Unused) and also guarantee/warranty certificate that the equipment confirms to laid down specifications.

The supplier shall invite the purchaser for pre-dispatch inspection. The Purchaser or his representative shall have the right to inspect/ examine/ test the goods in conformity with the contract awarded/supply order during the production or before dispatch from the manufacturer's premises. Such inspection and clearance will not prejudice the right of the consignee to inspect and test the equipment on receipt at destination.

The inspection/examination/ test may be conducted in the premises of the Supplier or at the goods final destination or at the premises of the consignee, as will be decided by the Purchaser. The purchaser's right to inspect/ examine/test & where necessary to reject the instruments & equipment after the arrival of the goods at the final destination, shall in no way be limited or waived by the reason of the goods having been inspected and tested by the manufacturer previously. In case of rejection of the goods at the final destination after inspection and test as stipulated above and in case any inspected/ tested goods fail to confirm to the specification/ working condition, the purchaser may reject them and the supplier shall replace/ repair the same free of cost.

6.4 Warrantee Period (comprehensive)

The Bidders must quote for a minimum period of **3** (**Three**) **years** of comprehensive **warranty** from the date of completion of the satisfactory commissioning as per (**Annexure-II**). This also includes all accessories related to instruments & equipment quoted for.

6.5 Payment Terms

• The supplier shall submit all bills in triplicate on printed forms to the University.

- The billing must be done with Odisha State VAT billing.
- The supplier must submit valid and up-to-date VATCC and copy of IT return along with the bill before release of payment.
- The University will make payments through account payee Cheque drawn on SBI Burla, in Indian Rupees. No interest on any deferred claim arising out of this purchase shall be payable in any case whatsoever.
- No payment will be made for instruments rejected at site during demonstration.
- The prices charged by the supplier for instruments delivered and services performed under the contract shall not be higher from the prices quoted by the supplier in this Tender.
- The 100% of the billed amount will be released only after 30 days of receipt of instruments in good conditions and successful performance on site from the final date of demonstration as per the specifications.

Payment Terms for imported instruments:

- In case of imported instruments, the mode of payment will be through TT (Telegraphic transfer) after receipt of instruments in good conditions and successful performance and demonstration as per the specifications.
- However, Indian Agency Commission or Technical Services charges would be paid in Indian rupee after satisfactory receipt & installation of goods at site. Indian Agency Commission should be declared in the price bid. If Indian agency commission is not mentioned in the price bid no claim for it shall be admissible afterward.

6.6 Transportation

The Supplier shall be required to meet all transport and storage expenses until commissioning of the instrument(s) / equipment covered in the contract.

6.7 Taxes and Duties

The Supplier shall be entirely responsible for payment of all Taxes, Duties etc. incurred until delivery of the contract goods to the Consignee subject to recovery afterwards in the bill as claimed in the Bid offer.

VAT as applicable is payable, to the suppliers of the State of Odisha if claimed in the Bid offer. VAT/ CST will be paid to the Suppliers of the outside State other than Odisha, if claimed in the Bid offer. Any revision of VAT/ CST shall automatically be taken into account. **Entry Tax**, if paid by the Supplier, at the local (destination head) Corporation/ Municipality/ NAC is allowed once only on production of money receipt for such payment, if claimed in the Bid offer. Any other statutory levy imposed by the Govt. of India/ Govt. of Odisha from time to time will be considered extra on demand with adequate proof thereof The service tax and the work contract tax shall be levied (Wherever applicable). Income Tax as applicable shall be deducted at source.

6.8 Incidental Services

The Supplier shall be required to provide any or all of the following services: (The cost should be included in the quoted Price)

- Furnishing of detailed literature/pamphlets/ circuit diagram/ operation & maintenance manual / drawings (as applicable) for each appropriate unit of supplied goods.
- Furnishing of tools required for assembly and / or maintenance of the supplied goods.
- Performance or supervision of on-site assembly and the supplied goods.
- Performance or supervision or maintenance and/ or repair of the supplied goods, for a period of time agreed by the parties, provided that this service shall not relieve the supplier of any warranty/ guarantee obligations under the contract.
- Training of the Purchaser's personnel at the Supplier's plant and / or on site, in assembly, start up, operation, maintenance and/ or repair of the supplied goods is mandatory. A maintenance contract for the goods supplied, if required by the user beyond the warranty period shall be on mutually agreed upon terms between the user and supplier. The cost of such maintenance contract shall not be included in the Bid cost.

6.9 Period of Validity of Bids

- The bid rates should be kept open/valid for a period of **180** days from the date the Bids are opened.
- A bid valid for a shorter period i.e less than **180** days shall be rejected, as nonresponsive.
- In absence of any indication of the date of validity in the bid, it will be presumed that the offer will remain valid for the minimum period i.e. **180** days as prescribed above.
- In exceptional circumstances the purchaser may solicit the bidders consent for extension of the period of validity. If agreed upon, the bid security so deposited shall also be suitably extended.

6.10 Commissioning Period

Maximum commissioning period is **30 days** from the date of supply OR **120 days from the date of issue of Purchase Order** failing which the purchaser will have the right to impose penalty for the delay period @ **0.5% per week of the contract value of item/items excluding taxes from the bill amount subject to maximum of 10%**. However, Registrar has right to extend the delivery period/commissioning period in special cases.

6.11 Penalty against Non Supply

In case of non-supply of Stores within the due date i.e. within the date of delivery the EMD deposited by the bidder shall be forfeited.

6.12 Rejected items

No payment shall be made for rejected supplied items. Rejected items must be removed by the bidders within two weeks of the date of rejection at their own cost and replace immediately. In case these are not removed these will be auctioned by the purchaser (at the risk and responsibility of the suppliers) without any further notice.

6.13 Annual Maintenance Contract

The Cost of Annual maintenance contract for next 3 years after warranty period shall be submitted as per the **Annexure at I(b)**. The after sales service during and after the warranty / guarantee period should be available from companies own engineers.

6.14 Jurisdiction of the Court

The Purchaser and the Supplier shall agree that the competent Court at Sambalpur shall have the jurisdiction to try and decide anything between the parties and they may approach the Competent Court at Sambalpur if required at any time.

REGISTRAR SSUL Busia of Technology kurta, Sambalpus, Odisha-768018

REGISTRAR VSSUT, Burla

ANNEXURE-I (a)

PRICE SCHEDULE (ITEM WISE) PRICE SCHEDULE (ITEM WISE)

| Item Serial No | Item Descript ion | Country of origin with make & model | Quantity & Unit | | | | | | | | |
|----------------------|-------------------------|--|--------------------|--|--|------------------------------------|---|--|---------------------------|---------|-------------------------------------|
| | | | | Exware house/ Ex- showro om/ Off-the- shelf (a) | Excise duty/Cost um duty, if any (b) | Packing & Forwar ding (c) | Inland transportat ion, insurance and other local csts incidental to delivery (d) | CST/ Entry tax, if any (e) | Unit price (a+b+c+d+e) | VAT (f) | Total Price (a+b+c+ d+e+f) |
| | | | | | | | | | | | |
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ANNEXURE-I (b)

PRICE SCHEDULE (ITEM WISE) - B PRICE SCHEDULE FOR ANNUAL MAINTANCE CONTRACT AFTER COMPLETION OF WARRANTY PERIOD.

| Sl.No | Brief description of Goods Total annual | Quantity in nos. | | | | Annual Maintenance Contract cost 3 years i.e. 3x (4a+4b+4c) | |
|-------|---|------------------|---------|---------|---------|---|--|
| 1 | 2 | 3 | _ | 4 | | 5 | |
| | | | 1st yr. | 2nd yr. | 3rd yr. | | |
| | | | (a) | (b) | (c) | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

After Completion of warranty period

Note: -

1. In case of discrepancy between unit price and total prices, THE UNIT PRICE shall prevail.

2. The cost of Annual Maintenance Contract (AMC) which includes preventive maintenance including testing & calibration as per technical/ service/ operational manual, labour and spares, after satisfactory completion of warranty period may be quoted for next 3 years on yearly basis for complete equipment and turnkey (if any).

3. The cost of AMC may be quoted along with taxes applicable on the date of bid opening. The taxes to be paid extra, to be specifically stated. In absence of any such stipulation the price will be taken inclusive of such taxes and no claim for the same will be entertained later.

4. Cost of AMC will not be added for Ranking/Evaluation purpose. However, the cost of AMC for lowest evaluated bidder is subject to negotiation.

5. The payment of AMC will be made as per payment terms of the bid document.

6. The uptime warranty and down time penalty shall be as per the bid document.

7. All software update should be provided free of cost during AMC period.

8. The stipulations in Technical Specification will supersede above provisions.

9. The supplier shall keep sufficient stock of spares require during Annual Comprehensive Maintenance Contract period. In case the spares are required to be imported, it would be the responsibility of the supplier to import and get them custom cleared and pay all necessary duties.

Place: Date:

> Signature of Bidder Business Address Seal of the Bidder

ANNEXURE - II

WARRANTY MAINTENANCE CONTRACT AGREEMENT.

THIS AGREEMENT made the.......day of, 20____ between the "**The Registrar**, **Veer Surendra Sai University of Technology, Burla**" (hereinafter "the Purchaser") of the one part and M/s...... (here in after called "the Supplier") of the other part: WHEREAS the Purchaser invited bids for certain Goods & ancillary services viz, supply and commissioning of the instruments & equipment at Bhubaneswar including Comprehensive Warranty Maintenance Services and has accepted a bid by the Supplier for the instruments &

Name of the Equipment & machineries Qty

(To be filled in as per details of goods in the award of Contract)

NOW THIS AGREEMENT WITNESSETH AS FOLLOWS:

1. Maintenance Services shall consist of Preventive and Corrective maintenance of equipment specified above & will include repair and replacement of parts free of cost.

2. Preventive maintenance, monthly once, which includes:

2.1 Check-up to ensure that device connection is proper, cabling is at proper condition etc.

2.2 Cleaning of the above instruments & equipments and checking the System Performance.

3. The Supplier is to furnish the tentative schedule of the preventive maintenance of Warranty Maintenance Contract (WMC) to be carried out.

4 The parts replaced must be new parts or equivalent in performance to new parts.

5. The Supplier will also provide the same maintenance service in case of the movement of equipment from the place of original installation to a different place or location, if the equipment is shifted by the Purchaser to another place or location at the cost and risk of the purchaser.

6. Any complaint informed through telephone must be acknowledged with a Complaint No. by the Supplier which will be noted by Consignee. All further contact with the Supplier on such complaint will be initiated through that Complaint No. Once rectification done, that No. will be

cancelled by both parties. A register is to be maintained by the Supplier where complaints are to be noted along with Complaint No.

7. The maintenance shall normally be done at the earliest.

8. The Service Engineer of the Supplier will be allowed to handle the respective plant & machineries only in presence of the officer in charge at the Consignee site.

9. The Supplier should ensure that maintenance job is not hampered/delayed due to paucity of spares/inadequate manpower etc.

10. The Supplier should submit the services call report, to the Consignee for each and every service call without fail.

11. The Supplier evaluation data format for the WMC of Consignee systems may be filled up for necessary action.

12. All formats after filled up should be signed at the end of each page by the Supplier.

13. After completion of the work/repair/maintenance, the Purchaser shall issue a certificate of completion to the supplier to that effect.

| Signature | Signature |
|-------------------|------------------|
| For the Purchaser | For the Supplier |
| Name: | Name: |
| Designation: | Designation: |
| Address: | Address: |
| Telephone No: | Telephone No: |

ANNEXURE-III

MANUFACTURES' AUTHORISATION FORM

No.____/ Date ____/

То

The Registrar, VSSUT Odisha Burla, Sambalpur.

Dear Sir, Bid No._____

| We | who are established and |
|---|---------------------------------|
| reputable manufacturers of | having factories at |
| | (Address of |
| Factory) do thereby authorize M/s | (Name and |
| address of Agent) to submit a bid and sign the contract v | with you against the above bid. |

* No company or firm or individual other than M/s._____ are authorized to bid and conclude the contract in regard to this business against this specific invitation for bid.

We hereby extend our full guaranty and warranty as per general conditions of contract for the goods and services offered by the above firm against this bid.

Yours faithfully, (Signature for and on behalf of Manufacturers)

Note: This letter of authority should be on the letterhead of the manufacturer and should be signed by a person, competent and having the power of attorney to bind the manufacturer. It should be included original by the Bidders in its bid.

- This para should be deleted for simple items where manufacturers sell the product through different stockiest.
- The Supplier/Managing Director of the Company (if the supplier is a Company) or the Power of Attorney Holder having specific power to sign the contract can only sign the contract/execute the agreement.

ANNEXURE-IV

DETAILS OF THE BIDDERS

Bid Reference No. Name and address of the Bidder:

- 01 Name of the bidder
 - a) Full postal address
 - b) Full address of the premises
 - c) Telegraphic address
 - d) Telephone number
 - e) Fax number
 - f) E mail:
 - g) PAN No
 - h) TIN No
- 02 Total annual turn-over (value in Rupees)
- 03 Quality control arrangement details
- 04 Test certificate held
 - a) Type test
 - b) BIS/ISO certification
 - c) Any other
- 05 Details of staff
 - a) Technical
 - b) Skilled
 - c) Unskilled

06 Branch Office/ Contact Person/ Liaisoning Office in Odisha.

- a) Address
- b) Telephone No.
- c) e-mail,
- d) Fax

Signature and seal of the Bidder

ANNEXURE-V

Technical details of the Equipment's to be supplied by the bidder

| Bid Sl No. | Tender | Bidders Specification with make and model no | Deviation if any |
|-------------|---------------|---|------------------|
| of the item | specification | (Enclose manufactures catalogue / brochure for each | With university |
| | | item) | specification |
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Signature and seal of the Bidder

VEER SURENDRA SAI UNIVERSITY OF TECHNOLOGY: BURLA



P.O: Engineering College Burla (Siddhi Vihar), Dist: Sambalpur Odisha– 768018, India

Ref: VSSUT/MME/8049/2016

Date:15/09/2016

TENDER CALL NOTICE

Sealed tenders are invited from original manufacturers/authorized dealers for the supply of different equipments for (i) Process Metallurgy and (ii) Fuel Testing laboratories of the **Dept. of Metallurgical & Materials Engineering**", VSSUT, Burla, Sambalpur, Odisha. The tenders shall reach the office of the undersigned through **Speed/Registered** post only **on or before 06.10.2016 12:00 Noon**.

For more details, please visit our university website <u>www.vssut.ac.in</u>. The authority the reserve right to accept or reject all the tenders without assigning any reason thereof.



REGISTRAR

No. VSSUT/MME/8050(5)/2016

Date:15/09/2016

Copy to: -

- M/s Display Lines, 219, Saheed Nagar, Bhubaneswar 751007 with request to publish the above advertisement in one issue of the "all Odisha daily edition of "The Samaja" and "all India edition of The "Times of India" at the I & PR approved/lowest rate. The bill may be sent in triplicate along with a copy of the paper in which the publication is made.
- 2. University Notice Board of VSSUT, Burl a.
- 3. Dean F & P, with a request to upload the notice & documents in the university.
- PA to Registrar for information & record. This is issued based re-tendering of the equipments and subsequent approval of Hon'ble Vice-Chancellor in *Note Page No:1/ File No: VSSUT/MME/473/2016* of Dept. of MME.
- 5. PA to Vice Chancellor for kind information to Hon'ble Vice Chancellor.



REGISTRAR

ANNEXURE –VI

| | 1. DIGITAL CALLIPER | | | | | |
|-----|----------------------------|---|--|--|--|--|
| Sl | I Specification Parameters | | | | | |
| No. | | | | | | |
| 1. | Display | LCD | | | | |
| 2. | Measuring speed | \leq 1.5 m / seconds or 60 inches / seconds | | | | |
| 3. | Measuring range | 0 to 150 mm | | | | |
| 4. | Power | One 1.5 V button cell | | | | |
| 5. | Storage temperature | 0 °c to 50 °c | | | | |
| 6. | Resolution | 0.01 mm | | | | |
| 7. | Influence of humidity | Not important under 80 % of relative humidity | | | | |

ANNEXURE –VII

| 2. DISC PELLETISER | | | | |
|--------------------|--------------------------|--|--|--|
| Sl | Specification | Parameters | | |
| No. | | | | |
| 1. | Inner diameter(mm) | 1000 | | |
| 2. | Side height(mm) | 250 | | |
| 3. | Volume | 0.4 m^3 | | |
| 4. | Rotation speed | 20-24 rpm | | |
| 5. | Motor power | 2.2 HP | | |
| 6. | Material of construction | Corrosion resistance, resistance to wear | | |
| 7. | Longevity | Maximum | | |

ANNEXURE –VIII

| 3. AUTOCLAVE | | | | | |
|--------------|---------------------------|---|--|--|--|
| Sl | Specification | Parameters | | | |
| No. | | | | | |
| 1. | Туре | Vertical top loading | | | |
| 2. | Materials of construction | Stainless steel | | | |
| 3. | Design temperature | 300°° | | | |
| 4. | Design pressure | 1070KPA | | | |
| 5. | Working temperature | 250°° | | | |
| 6. | Woking pressure | 1050KPA | | | |
| 7. | Temperature accuracy | ±2 | | | |
| 8. | Temperature control | Automatic pre-setting digital temperature controller cum indicator with suitable J type of temperature range 0-300 °c | | | |
| 9. | Insulation | The entire system must be insulated suitable | | | |
| 10. | Pressure controller | Automatic digital display controller cum indicator with suitable transducer | | | |
| 11. | Safety device | Automatic temperature and pressure safety device including and excess pressure release valve | | | |
| 12. | Time programmer | Yes | | | |
| 13. | Volume | 2 litres | | | |

ANNEXURE –IX

| | 4. HOT PLATE WITH MAGNET | TC STIRRER |
|-----|---|---------------------------------|
| Sl | Specification | Parameters |
| No. | - | |
| 1. | Speed Range | Up to 2000 RPM |
| 2. | Heating Power | 500-600 W |
| 3. | Maximum Surface Temperature | 300 ° ° |
| 4. | Surface Material | Non corrosive Metal |
| 5. | Surface Length | 6.69 Inches (170mm) |
| 6. | Surface Width | 6.69 Inches (170mm) |
| 7. | Unit Length | 10.32 Inches (262mm) |
| 8. | Unit Width | 6.69 Inches (170mm) |
| 9. | Unit Height | 4.80 Inches (122mm) |
| 10. | Unit Weight | 3-4kg |
| 11. | Power | 110V-120V, 50/60Hz |
| 12. | 2 analog dials to control heating and stirring | to control heating and stirring |
| | independently | independently |
| 13. | 1 pc – 5 Foot Power Cord | Yes |
| 14. | 1 pc – Magnetic Stir Bar, 0.98 Inch (25mm) | Yes |
| 15. | 1 pc – Stainless Steel Rod, 12 Inch (305mm) | Yes |
| 16. | 1 pc – Thermometer/Probe Clamp, 7.09 Inch (180mm) | Yes |
| 17. | 1 pc – Clamp Holder | Yes |

ANNEXURE -X

| | 5. DISTILLATION SET UP WITH CONDENSOR | | | | | |
|-----|--|--------------------------------|--|--|--|--|
| Sl | Specification | Parameters | | | | |
| No. | | | | | | |
| 1. | All glass parts are | Heavy Borosilicate Glass | | | | |
| 2. | Electronic stove | 1500 W, 120 V -220V | | | | |
| 3. | Support stand (2pc) | Corrosion resistance /metallic | | | | |
| 4. | 2 Neck boiling flask (2pc) | 2000ml | | | | |
| 5. | Filling flask (2pc) | 2000ml | | | | |
| 6. | Distillation head (2pc) | 50/40 and 24/40 ground joint | | | | |
| 7. | Allihn Condenser (2pc) | 300ml, S 35 and 24/40 joint | | | | |
| 8. | Receiver separation funnel with Teflon stop cock | 24/40 joints | | | | |
| | (2 pc) | | | | | |
| 9. | glass stopper (2pc) | 24/40 joints | | | | |
| 10. | Plastic clip (4 pc) | 24/40 | | | | |
| 11. | Plastic clip (2pc) | 45 # | | | | |
| 12. | Stainless steel clip (1pc) | S35 | | | | |
| 13. | Rubber hose (2pc) | 2 meters | | | | |

| 14. | Glass container transparency | Fully transparent |
|-----|---|----------------------------------|
| 15. | Reactivity | maximum inertness towards |
| | | widest range of chemical |
| | | substances |
| 16. | Thermal shock without fracture and high | Yes |
| | temperature work without deforming | |
| 17. | Resilient enough to survive the everyday knocks | Yes |
| | to which it will be subjected in normal | |
| | laboratory handling, washing and sterilizing | |
| | processes | |
| 18. | Thermal Properties of glass wares | Coefficient of thermal expansion |
| | | of glass is low |
| 19. | Distillation temperature | 100-500 °° |

ANNEXURE -XI

| | 6. RECTIFIER | | |
|-----|--|--------------------------------------|--|
| Sl | Specification | Parameters | |
| No. | | | |
| 1. | Current and voltage | 0.32v, 10amp | |
| 2. | Storage Temperature | The Rectifier shall withstand in | |
| | | definite storage temperature from - | |
| | | 40°C to 150°C without failure or | |
| | | performance degradation at operating | |
| | | temperatures. | |
| 3. | capable to provide a high quality (smooth) DC | Yes | |
| | power supply | | |
| 4. | Natural air cooling shall be employed at specified | Yes | |
| | ambient conditions | | |
| 5. | Input power | 400-440 volt AC, 3 phase , 50-60 hrz | |
| 6. | Manual adjustment for input and output parameters | Yes | |
| 7. | Rectifier alarm | AC failure and rectifier failure | |
| 8. | Led indications Yes | | |
| 9. | Modules must be protected from over and under Yes | | |
| | voltage | | |
| 10. | Easy install, removed , safety locked of all modules , Yes | | |
| 11. | Fused circuit breaker and safety device Yes | | |
| 12 | Materials | Corrosion resistance /resistance | |
| | | towards acids, salts | |

ANNEXURE -<mark>XII</mark>

| 7. MULTIPURPOSE PH METER | | | |
|--------------------------|---------------------------------------|--------------------|-----------------------------------|
| Sl No. | | Specification | Parameters |
| 1. | PH | Range | -1.000 to 14.000 pH |
| | | Resolution | 0.01, 0.001 pH |
| | | | (Selectable) |
| | | Accuracy | ±0.01, ±0.002 pH |
| | | Calibration Points | Up to 5 |
| | | Buffer Sets | USA, NIST, Custom |
| 2. | ORP | Range | ± 1850 mV |
| | | Resolution | ± 1850 mV |
| | | Relative mV Range | |
| | | Resolution | 0.1mV |
| | , , , , , , , , , , , , , , , , , , , | Accuracy | ±0.2 mV |
| 3. | Ion | Range | 0.001 to 19999 ppm |
| | | Resolution | 0.001, 0.01, 1 ppm |
| | | Accuracy | $\pm 0.5\%$ full scale |
| | | | (monovalent), $\pm 1\%$ full |
| 4 | | D | scale (diavalent) |
| 4. | Temperature | Range | -5.0 to 105 °C / 23.0 to 221.0 °F |
| | | Resolution | 0.1 °C / 0.1 °F |
| | | Accuracy | ±0.3 °C / ±0.5 °F |
| | | Compensation | ATC/MTC (0 to 100 °C) |
| 5. | Meter Features | Display | Custom Dual display LCD |
| | | | (1 x 4 digit, 1 x 3.5 digit, |
| | | | 24 annunciators) |
| | | Memory | 100 Data sets |
| | | Electrode Arm | Yes, Built-in |
| | | Input | BNC, phono (ATC) |
| | | Output | RS 232C |
| | | GLP | Yes |
| | | Data logging | Yes |
| | | Power Requirements | 9 V DC Adapter, 500 mA |
| | | | (220 VAC) |
| 6. | Standard Supply | electrode | Included |
| 0. | | | ECFG7350401B, Single |
| | | | junction glass pH |
| | | | electrode. (ORP and Ion |
| | | | electrodes to be ordered |
| | | | separately |
| 7. | Dimensions | Meter | 23 x 18 x 6.3 cm ; 850 g |
| | (LxWxH); Weight | boxed | 40 x 26 x 9 cm ; 1400 g |

ANNEXURE –XIII

| | 8. FLOW RATE METER | | |
|-----------|---|---|--|
| Sl No. | Specification | Parameters | |
| 1 | stainless steel case | Case | |
| 2 | of liquids (water) and gases (air.) oil | Used for flow measurements | |
| 3 | Wetted parts include borosilicate glass flow tubes | Wetted parts | |
| 4 | yes | Guide rods and float stops | |
| 5 | rib-guided or fluted metering tubes facilitate stable and accurate readings | Readings | |
| 6 | magnifier lens in front shield to enhance reading resolution | Magnifier lens | |
| 7 | Yes | Interchangeability flow tubes and floats | |
| 8 | ease of installation and exchange of flow tubes | Installation and exchange | |
| 9 | Yes | Non-rotating" adapter feature | |
| 10 | yes | Provision for minimize parallax and eye fatigue | |
| 11 | yes | Chemical Compatibility | |
| 12 | Yes | Panel mounting | |
| 13 | ±2% FS (mm scales - except 042 flow tubes); ±5% FS (direct reading scales and 042 flow tubes) | Standard Accuracy | |
| 14 | ±1% FS | Calibrated Accuracy | |
| 15 | ±0.25% FS | Repeatability | |
| 16 | 10:1 minimum with one float and better than 20:1 with combination of two floats installed in meters | Flow Range | |
| 17 | 14 bars | Maximum Operating Pressure | |
| 18 | 125 °C | Maximum Operating Temperature | |

ANNEXURE –XIV

| | 9. REDWOOD VISCOMETER | | |
|-----------|--|--|--|
| Sl No. | Specification | Parameters | |
| 1 | viscosity tests of petroleum Products | Test product | |
| 2 | Liquids having Red Wood flow 20 seconds to 2000 seconds and for liquids whose flow time exceeds 2000 seconds. | Flow rate | |
| 3 | Stainless steel bath | Outfit | |
| 4 | electrical heating arrangement suitable to operate at 220- 230 Volts AC Mains | Heating arrangement Volts AC Mains | |
| 5 | silver plated oil cup with precision stainless steel jet, | Oil cup , jet | |
| 6 | ball valve | Valve | |
| 7 | thermometer-clip | Clip | |
| 8 | yes | Stirrer | |
| 9 | yes | Electrically Heated with Energy Regulator control | |
| 10 | Gas heated with gas burner | Provision for other heating | |
| 11 | With electronic digital indicator and controller & FHP motor stirrer | Indicator | |
| 12 | Ambient to 270°C | Temperature range | |
| 13 | ±0.02 up to 150°C ±0.2 above 150°C | Temperature Stability | |
| 14 | 4 liters | Capacity | |
| 15 | Oil | Bath Fluid | |
| 16 | 110/130V, 50/60Hz 220/250V, 50/60Hz | Voltage | |
| 17 | 101kW | Power | |
| 18 | 79 x 49 x 31cm | Size (HxWxD) | |
| 19 | 20kg | Weight | |
| | | | |

ANNEXURE –XV

| | 10.PENSKY MARTIN APPARATUS | | |
|-----------|---|---|--|
| Sl No. | Specification | Parameters | |
| 1 | (ASTM+ISO) standard | Test programs | |
| 2 | Manual/automatic | Operation | |
| 3 | up to 410 °C | Temperature range | |
| 4 | Gas and electric | Ignition type | |
| 5 | According to standard method or user-defined | Stirring speed | |
| 6 | According to standard method or user-defined | Heating rate | |
| 7 | yes | Built-in forced air Cooling | |
| 8 | yes | Flash point is automatically corrected to barometric pressure | |
| 9 | Thermal/eliminates interferences from water | Detection | |
| 10 | Overheat protection, automatic shut-off, Automated fire- extinguishing system ,Password protection | Safety | |
| 11 | Self-made Pt100 sample-temperature-probe calibration, against certified a liquid-in-glass ASTM thermometer Pt100 sample-temperature-probe correction using up to 21 user- defined temperature points from the external calibration certificate Heater-block-Pt100 calibration `Barometric- pressure-sensor calibration | Calibration | |
| 12 | Splash-proof membrane key panel with color display, Jog shuttle with LED indication for input of test parameters, sample name and program selection parameters, Progress of test displayed in different colors (user-defined),The jog shuttle and 4 softkeys underneath the display are used for operationHandling | | |
| 13 | 1000 tests, 30 operator names and 200 samples | Memory | |
| 14 | Mean, Min, Max, Repeatability Statistics | | |
| 15 | real-time measurement displayed Display | | |
| 16 | 120/230 V, 50/60 Hz | Electrical supply | |
| 17 | 230 mm x 410 mm x 460 mm | Dimensions(W x D x H) | |
| 18 | 15 kg | Weight net | |

ANNEXURE -XVI

| | 11. MUFFLE FURNA | 1 |
|----------|---|------------------------------|
| SI | Specification | Parameters |
| No. | | |
| 1 | Thermal efficient ceramic (high purity alumina fiber) insulation surrounding the chamber provides maximum energy efficiency. Resistance wire coil on three sides of interior chamber for fast and uniform heating Heavy duty double layer structure with cooling fan to keep furnace exteriors safe to touch. Vent port installed on top doubles as outlet for gas flow. 0.5" diameter observation window made of quartz glass allows the user to see inside chamber. Gas fill tube is included which can be installed to replace the observation window. Optional Al203 sample plate can also be ordered for this furnace. | Structure |
| 2 | • 30 x 20 x 12 cm • 480 cubic-inch or 7.2 Liter | Chamber Dimensions D x W x H |
| 3 | 4.0KW | Power |
| <u> </u> | 200 -240V Single Phase 50/60 Hz | Voltage |
| 5 | • 100-1100 °C • 1100 °C (Continuous) • 1200 °C Max (< 1.5 hour) | Operating Temp Range |
| 6 | +/- 0.5 °C | Stability at 1000 °C |
| 7 | +/- 2.0 °C | Uniformity at 1000 °C |
| 8 | 50°C/ min. | Max. Heating Rate |
| 9 | PID automatic control and auto-tune function. 30 programmable segments for precise control. Built-in over temperature alarm and protection allows for operation without attendant. +/- 1 °C temperature accuracy. K type thermocouple installed for immediate use. | Temperature Control |
| | 2 year limited warranty with life time support. | Warranty |

ANNEXURE -XVII

| | 12. HYDRAULIC KBR PRESS | | |
|-----|-----------------------------|-------------------------------|--|
| Sl | SI SPECIFICATION PARAMETERS | | |
| No. | | | |
| 1 | 15 Ton | Capacity | |
| 2 | 13 mm | KBr Die | |
| 3 | 80 mm | Piston size | |
| 4 | 25 mm | Piston Travel | |
| 5 | (230× 180 × 350) mm | Overall dimension | |
| 6 | yes | Pellet holder | |
| 7 | yes | Plunger anvil | |
| 8 | 1 No. | Agate Mortar & Pestle- 2" Dia | |