



॥ सा विद्या या विमुक्तये ॥
भारतीय प्रौद्योगिकी संस्थान धारवाड
Indian Institute of Technology Dharwad

INDIAN INSTITUTE OF TECHNOLOGY DHARWAD
Off Pune Bengaluru Highway, Near High Court,
Dharwad, Karnataka - 580011

TENDER FOR SUPPLY, INSTALLATION AND DEMONSTRATION OF LABORATORY EQUIPMENT (4 Stroke SI & CI Engine Setup) FOR DEPARTMENT OF MECHANICAL ENGINEERING IN INDIAN INSTITUTE OF TECHNOLOGY DHARWAD

NOTICE INVITING TENDER (NIT) / RFP

| | | |
|--|--|--|
| Tender No. | IITDH/MMD/ME/2019-20/64 | |
| Description | <u>TENDER FOR SUPPLY, INSTALLATION AND DEMONSTRATION OF LABORATORY EQUIPMENT (4 Stroke SI & CI Engine Setup) FOR DEPARTMENT OF MECHANICAL ENGINEERING IN INDIAN INSTITUTE OF TECHNOLOGY DHARWAD</u> | |
| Tender Date | 26.12.2019 | |
| Tender Category | Goods | |
| Tender Type | Open Tender | |
| No. of Covers | 2 | |
| Covers Information / Submission of Bids | | |
| Cover No. | Cover Type | Description |
| 1 | Technical | EMD, Schedule of Requirement and Compliances, Bidders Information, Previous Supply Orders etc. |
| 2 | Financial | Financial Bid |
| Two Bid System: - The two bid system will be followed for this tender. In this system bidder must submit their offer in separate sealed envelopes as – <u>Technical Bid (Envelope No. A)</u> and <u>Commercial Bid (Envelope No. B)</u> . Both these sealed covers are to be put in a bigger cover which should also be sealed and duly super-scribed with our Tender No. & Due Date and to be submitted to IIT Dharwad. | | |
| Note: The technical offer should not contain any price information. If the price quoted is submitted in technical bid the tender will be rejected by IIT Dharwad. Initially Technical Bids will be opened and evaluated by the purchase committee. Commercial bids of only Technically qualified bidders will be opened later. Contract/ Purchase Order will be awarded to the lowest bidder (L-1) identified. | | |
| Form of Contract | Buy | |
| EMD Fee Details (in the form of Demand Draft or Bank Guarantee) | | |
| EMD Fee INR: | Rs.36,700/- (Rupees Thirty Six Thousand Seven Hundred only) | |
| Payable to: | The Registrar, IIT Dharwad | |
| Payable at: | Hubli-Dharwad | |
| Bid Validity (Days): | 90 Days | |



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| | |
|---|---|
| Period of Work/Delivery Period (Days) | 90 Days |
| Start date for Submission of queries via email to armm@iitdh.ac.in | 26.12.2019 |
| End date for Submission of queries via email to armm@iitdh.ac.in | 02.01.2020 till 10:00 AM |
| Date of rebuttal/reply of queries (to be uploaded on the website) and publishing revised tender (if required) | 03.01.2020 at 12:00 PM |
| Contract Type: | Open Tender |
| Delivery Location: | IIT Dharwad, Karnataka, India |
| Pin Code | 580011 |
| Bid Submission Start Date & Time | 03.01.2020 from 12:00 PM |
| Bid Submission End Date & Time | 17.01.2020 till 10:00 AM |
| Place of Submission of Bid | The Assistant Registrar (MMD), IIT Dharwad Off Pune Bengaluru Highway, Near High Court, Dharwad, Karnataka- 580011, India |
| Bid Opening Date & Time | 17.01.2020 at 11:00 AM |
| Bid Opening Place | The Assistant Registrar (MMD), IIT Dharwad Off Pune Bengaluru Highway, Near High Court, Dharwad, Karnataka- 580011, India |
| Other Terms & Conditions | Warranty as per mentioned in technical specification |
| Tender Inviting Authority: | The Assistant Registrar (MMD), on behalf of Director, IIT Dharwad Address: Off Pune Bengaluru Highway, Near High Court, Dharwad, Karnataka- 580011, India |

Sd/-
Assistant Registrar (MMD), IIT Dharwad
(For and on behalf of Director, IIT Dharwad)



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Section - I: Invitation of the Bids & Submission Procedure details

1. Indian Institute of Technology Dharwad invites sealed tenders (under two bid system) from reputed suppliers/manufacturers OR authorized dealers for Supply, Installation and Demonstration of Laboratory Equipment (4 Stroke SI & CI Engine Setup) for Department of Mechanical Engineering in Indian Institute of Technology Dharwad as per the Technical Specifications given in the schedule annexed to the tender.
2. The bidder should note that the technical specifications mentioned in **Section IV** form the core of the product. The offers must strictly be as per the specifications given. At the same time, it must be kept in mind that mere copying of our specifications in the quotation shall not make the technical bid eligible for consideration. A bid has to be supported with original catalogue of the quoted item duly signed by the principals and the same must be sent along with the technical bid. Non-compliance with above shall be treated as incomplete/ambiguous and the bid may be ignored without giving an opportunity to the bidder for further clarification/negotiation etc.
3. In order to specify/modify technical specifications of the equipment and clarify various issues as may arise, a query session (by email) for clarification is provided. Resultant rebuttal/re-publishing of modified RFP (as the case may be) will be published, if required. The bidders are advised to utilise the period given for clarifying any issue pertaining to RFP and to bring out any limitation / suggestion in the RFP. After the period is over, no issue will be addressed and the institute will assume general acceptance of RFP terms and conditions. Prospective bidders have to submit their bids post rebuttal/modification in RFP (as the case maybe).
4. Any item not specifically mentioned in the tender document but essential in the opinion of the bidder for successful supply, installation and demonstration of laboratory equipment (4 Stroke SI & CI Engine Setup), should be brought to the notice of the IIT Dharwad within the pre-bid clarification period and before end date of submission of queries. On clearance from our side, the same may be included in the modified RFP (as the case may be). However, the decision as to whether to consider such items or not, rests with the Institute.
5. The bidder shall ensure that the bid submitted by him includes all accessories (as per annexures) for full execution of contract. The bidder shall not charge extra for additional items required to meet the operational requirement at the stage of installation and commissioning.
6. Quantity requirements of each item as per the specification enclosed at **Section IV**.

| Sl. No. | Particulars of the item(s) | Requirement |
|---------|--|--|
| (a) | <u>SUPPLY, INSTALLATION AND DEMONSTRATION OF LABORATORY EQUIPMENT (4 Stroke SI & CI Engine Setup) FOR DEPARTMENT OF MECHANICAL ENGINEERING IN INDIAN INSTITUTE OF TECHNOLOGY DHARWAD</u> | Individual item requirements as per <u>Section IV</u> |

7. It may kindly be noted by all the prospective bidders that the tender will be awarded to the lowest successful bidder (L-1) for each item separately (as per tender subject).



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Procedure for Bid submission

8. Every page, containing the said procedure for submission of bid and other important conditions, are to be signed by the bidder (to be serially numbered & bounded) and to be submitted along with their Technical bids towards their acknowledgement that they have gone through all the contents in these pages and in the Annexure as well and they are agreeing to comply to all of the conditions mentioned there. Non adherence to this may lead to the disqualification of the bid without further notice.
9. Two bid system: The offers/bids are to be submitted under a two bid system, namely (i) Technical Bid and (ii) Commercial Bid. The Technical Bid must contain all the details as specified in the Annexures along with the terms and conditions whereas Commercial Bid must indicate the quantity & rate only. There must not be any price element in the technical bid.
10. Sealing & marking of bid: The tender should be submitted in a proper manner with index for easy identification i.e.: -

| <u>Envelope Number</u> | <u>To be super-scribed as</u> |
|------------------------|--|
| A | EMD for Tender & Technical Bid documents |
| B | Commercial Bid / Price Bid / BOQ |

Envelope – A (duly sealed): should contain the EMD & documents as listed under Technical Bid Qualification.

Envelope – B (duly sealed): should contain the Commercial Bid (strictly as per the format provided).

Both the above envelopes should clearly be marked on top about the type of envelopes (i.e. A or B), details of contents in envelopes and name of agency submitting the bid.

The envelopes (A & B) after sealing must be kept in one bigger envelope and shall be addressed to:
The Assistant Registrar (MMD)
IIT Dharwad, Off Pune Bengaluru Highway,
Next to High Court, Dharwad - 580011, Karnataka, KA, INDIA

The bigger envelope must be sealed and must bear the following identification on top: -

- a) Tender for 'SUPPLY, INSTALLATION AND DEMONSTRATION OF LABORATORY EQUIPMENT (4 Stroke SI & CI Engine Setup)'
- b) Tender Number: _____ Date: _____ and
- c) Name and Address of the Bidder.

If the outer envelope is not sealed and not marked as above, the Institute will assume no responsibility for the misplacement or premature opening of Bid.

11. **Submission of tender:** The tender can be personally dropped in the tender box (kept near the IIT Dharwad building entrance outside MMD Section under supervision of a security guard) on all working days during working hours (except Saturday, Sunday & Holidays) before the date and time as specified in the Tender Notice and up to 10.00 AM on the last date of submission of tender. The tender can also be sent by registered post to The Assistant Registrar (MMD), Indian Institute of Technology Dharwad, Off Pune Bengaluru Highway, Next to High court, Dharwad - 580011, Karnataka, INDIA. Tender shall not be received after expiry of the time as specified in the tender notice. Late bids will not be accepted. However, in case the due date of tender submissions happens to be a holiday or office is closed due to any reason, then the tender submission date will automatically extend to the next working day (end submission time remains same).



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12. TECHNICAL BID DOCUMENTS & ELIGIBILITY CRITERIA:

Only those bidders fulfilling the following Eligibility Criteria (supported by documents) are expected to participate in the Tender **(all criteria to be mandatorily fulfilled for technical qualification):** -

| S. No. | Eligibility Criteria | Document required |
|--------|---|--|
| a | EMD as sought under this tender document. (or) In case EMD exemption is sought under SME/ MSME/ NSIC (for bids not involving Imports and quoted in INR). Note: EMD exemption is not permissible in case of Import purchases or for bids quoted in Foreign currency. | EMD in the form of Demand Draft or bank guarantee. (or) Valid SME/ MSME/ NSIC to be provided. |
| b | Duly signed & stamped copy of the entire tender document. | The entire tender document to be duly signed & stamped by the bidder on each page. |
| c | PAN Card and GST certificate | Copy of PAN Card and GST certificate to be provided. |
| d | Income tax returns (ITRs) for last three consecutive financial years | Copy of Income tax returns for last three consecutive financial years (period from 2016-17, 2017-18 and 2018-19). |
| e | Proof of establishment of company/business for a period of more than 3 years. | The Bidder must be a reputed supplier/ manufacturer/ authorized dealer / authorized distributor/ authorized stockist/ channel partner in the business of supply, installation and demonstration of laboratory equipment (4 Stroke SI & CI Engine Setup) for a period not less than 3 years (i.e. must be in this business from October 2016 or earlier). The certificate of incorporation or any other relevant certificate to this effect is required to be enclosed. |
| f | Previous experience & copy of performance certificates along with Purchase Orders | Copy of at-least one performance certificate (along with purchase order) of supply, installation and demonstration of laboratory equipment (4 Stroke SI & CI Engine Setup) to any PSU/Govt. Department/Institute/ IITs/ NITs/ IISc/ IISERS/ Central Universities/ laboratories of national importance. |
| g | Proof that the bidder / Manufacturer had not been blacklisted or debarred anywhere in India or abroad by any organization. | A Certificate/Undertaking on the letter head of the Company to the effect that the bidder/ Manufacturer had not been blacklisted or debarred anywhere in India or abroad by any organization. |
| h | <u>Duly filled and completed Section-IV</u> <ul style="list-style-type: none"> • Compliance for commercial terms of tender • Compliance for technical specifications of the equipment to be supplied • Bidders information & Reasonability of prices | The following information on the letter head of the company / bidder: <ul style="list-style-type: none"> • Compliance for commercial terms of tender • Compliance for technical specifications of the equipment to be supplied • Bidders information & Reasonability of prices |



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13. The tenderer must submit all documents required for evaluation of technical bid and sought in the RFP as forming part of technical evaluation with signature and seal of the competent authority of the firm. In the event of non-receipt of any of the documents forming part of Technical Bid, tenderer may be disqualified from the process. No paper relating to the technical bid will be received during the Technical Bid evaluation or afterwards except for cases recommended & decided by the Procurement Committee. Further, any separate correspondence in the matter shall also not be entertained.
14. During evaluation of the Technical Bid, the Procurement Committee will scrutinize the documents mentioned above and may forward any or all the documents to the concerned authorities for verification and authentication. In case of any document(s) as submitted by the tenderer is found/reported to be fake, the tenderer will be out of the tendering process and suitable legal action may be initiated against the tenderer.
15. Besides, scrutinizing the documents submitted with the Technical Bid, the tenderer may be interviewed by the Committee to assess the eligibility, capability, and suitability of the tenderer. As such, the presence of the tenderer or any authorized representative of the tenderer in the Technical Bid meeting & commercial bid opening or as and when desired by authorities of IIT Dharwad is preferable.
16. The above mentioned basic eligibility conditions and additional clauses are broad guidelines for pre-qualification and the Director, IIT Dharwad hereby reserves the right to relax/ alter/ modify/ add any or all the conditions.

17. **Delivery Terms (only DDP mode of shipment acceptable):**

Items should be door delivered at IIT Dharwad, Karnataka, India – 580011.

In case of import supplies, the bidder is requested to specify the same in Section-IV of this document. In order to obtain the necessary documents for import clearance & customs etc., the bidder must quote in Foreign currency only and the incoterm acceptable shall only be DDP (Delivered Duty Paid), IIT Dharwad. The supplier should arrange for entire process from origin of equipment to the Stores at IIT Dharwad (including charges for export packing, Marking & labeling, export clearance, freight forwarder documentation fees, Inland freight to main carrier, origin terminal charges, loading charges, ocean/air freight, export forwarding, insurance of goods, unloading charges, destination terminal charges, custom duty, custom clearance fee, transport to buyer destination, unloading at buyer destination, installation, commissioning, demonstration and training; within the quoted price). However, the necessary documents required during this complete process & their formats must be attached with the technical bid.

In case of indigenous supplies too, the bidder is requested to specify it clearly in Section-IV of this document. In order to obtain the concessional GST certificate, the bidder must quote in INR only and the delivery term acceptable shall only be door delivery at IIT Dharwad. The supplier should arrange for entire process from origin of equipment to the Stores at IIT Dharwad (including charges for safe packing, Marking & labeling, loading charges, road/air freight, insurance of goods, unloading charges, transport & unloading at buyer destination, installation, commissioning, demonstration and training; within the quoted price).

CDEC/DSIR or any other import related document will not be issued in case of indigenous supplies (or for bids quoted in INR).

18. **Freight & Insurance:**

No freight and insurance charges will be provided and the materials are to be delivered at IIT Dharwad WALMI Campus, IIT Dharwad at the cost and risk of the supplier/Bidder within quoted price as per the delivery terms mentioned in the above paragraphs.



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19. Warranty declaration:

- a. The Bidder/supplier must give a comprehensive on-site support and maintenance for a period specified in respect of the subject item (mentioned in Section-IV) from the date of commissioning and acceptance of the items.
- b. Any deviation in the equipment and the specification from the accepted terms and conditions may lead to rejection and non-acceptance of stores. In such case, the bidder/manufacturer is required to supply all the items in the specified form to the satisfaction/ specifications mentioned in the order and demonstrate at their own cost. The payments shall be made only after receiving the materials as per required specification and quality to the satisfaction of the competent authority of IIT Dharwad.

20. Installation & Demonstration:

- a. The supplier is required to carry out the supply, installation, commissioning & demonstration of the subject item at the IIT Dharwad installation site within the delivery period; otherwise the penalty clause will be the same as per the supply of material (refer to the liquidated damages below).
- b. In case of any mishandling/damage to items and supplies during carriage from the origin of items to the installation site, the supplier has to replace it with new items/supplies immediately at his own risk of cost. Supplier will settle his claim with the insurance company as per his convenience. IIT Dharwad will not be liable for any type of losses in any form.
- c. It is for the information of all prospective bidders that IIT Dharwad is presently operating from a temporary campus belonging to Water and Land Management Institute (WALMI) and located Near High Court, Dharwad, Karnataka, India – 580011. The permanent campus of IIT Dharwad shall be located at Chikkamalligewad Village, Dharwad, Karnataka, India – 580011. The distance between both the locations shall be approximately 3-4 kms. The bidders are required to quote the final price including a relocation of the entire Equipment set-up (supplied under this tender) from existing temporary campus to new permanent campus. No additional payment will be made on this account and the tentative date of relocation will be intimated officially (probably during the year 2022/23). A certificate to this effect is required to be attached with the technical bid stating that the prices quoted are inclusive of one free relocation entire Equipment set-up (supplied under this tender) on intimation by authorities at IIT Dharwad.

21. Liquidated Damages:

The equipment should be delivered/dispatched to destination and ready for use not later than the delivery period specified. If the supplier/Bidder fails to deliver any or all the stores or perform the service by the specified date, liquidated damages @0.5% per week or part thereof in respect of the value of the delayed stores will be deducted from the bill subject to a maximum of 10% value. Same terms are applicable for installation, training and demonstration clause mentioned above.

22. Dispute and Jurisdiction:

Any legal disputes arising out of any breach of contract pertaining to the whole process of this tender shall be settled in the court of competent jurisdiction in the district of Dharwad, Karnataka.

23. Acknowledgement by the Bidder:

It is hereby acknowledged that we have gone through all the schedules as well as the conditions mentioned above and we agree to abide by these.

Date:

Signature of the Bidder along with official seal.

Place:

CANVASSING OR OFFERING AN ADVANTAGE OR ANY OTHER INDUCEMENT BY ANY PERSON WITH A VIEW TO INFLUENCING ACCEPTANCE OF A BID WILL BE AN OFFENSE UNDER LAWS OF INDIA. SUCH ACTION WILL RESULT IN THE REJECTION OF BID, IN ADDITION TO OTHER PUNITIVE MEASURES.

Sd/-
Assistant Registrar (MMD), IIT Dharwad
(For and on behalf of Director, IIT Dharwad)



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Off Pune Bengaluru Highway, Near High Court,
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Section II: Instructions to Bidders

1. Cost of Bidding:

The Bidder shall bear all costs associated with the preparation and submission of its Bid and the Purchaser shall not be held responsible or liable for those costs incurred regardless of the conduct or outcome of the bidding process.

2. Amendments to Tender Document:

- a) At any time prior to the deadline for submission of bids, IIT Dharwad may, for any reason, whether on its own initiative or in response to the clarification sought by a prospective BIDDER may modify the bid document by issuing necessary corrigendum.
- b) All prospective BIDDERS who have downloaded the tender document are requested to visit IIT Dharwad website for any amendments / modifications and make a note of the same, which will be binding on them.

3. Bid Opening Process:

- a) In case of one bid system, technical & financial bid will be opened simultaneously in the presence of representatives of the bidders at IIT Dharwad.
- b) In case of two bid system, The Technical Bid will be opened in the first instance in the presence of Technical Evaluation Committee (TEC)/MMD & representatives of the bidders at IIT Dharwad.
- c) Financial bids of only those bidders, whose bids are found technically qualified, by the Technical Evaluation Committee, will be opened in the presence of the Technical Evaluation Committee (TEC)/MMD & bidders' representatives subsequently at a later date for further evaluation. Date and Time of financial bid opening shall be intimated to technically qualified bidders only.
- d) One authorized representative of each of the bidder would be permitted to be present at the time of opening of the bids.
- e) The authorized representative of bidders, present at the time of opening of the bids shall be required to sign an attendance register as a proof of having attended the Technical/Commercial bid opening session.

4. Supplementary offer /Modification of Original Bid:

BIDDER desirous to modify their offer/terms may submit their revised / supplementary offer (s) strictly within the Tender Opening Date (TOD) by clearly stating to the extent of updation done to the original offer. The purchaser reserves the right to open the original offer along with the revised offer.

5. Confidentiality:

- a) Information relating to the evaluation of bids, and recommendation of Contract award, shall not be disclosed to Bidders or any other persons not officially concerned with such process until information on Contract award is communicated to all Bidders. On completion of Technical Evaluation by the Committee, Vendors whose offer do not meet with the users Technical Specification will be restricted to participate in commercial bid opening process. Information regarding the criteria for disqualification of the tender would be communicated to the bidder in writing (preferably through email provided in the bid).
- b) Any attempt by a Bidder to influence the Purchaser in the evaluation of the Bids or Contract award decisions may result in the rejection of its Bid.
- c) Notwithstanding, from the time of Bid opening to the time of Contract award, if any Bidder wishes to contact the Purchaser on any matter related to the bidding process, it must be done either through e-mail or in writing.



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6. Deviation, Reservations and Omissions:

During the evaluation of Bids, the following definitions apply:

- a) “Deviation” is a departure from the requirement specified in the Tender Documents;
- b) “Reservation” is the setting of limiting conditions or withholding from complete acceptance of the requirements specified in the Tender Documents; and
- c) “Omission” is the failure to submit part or all of the information or documentation required in the Tender Documents.

7. Correction of Arithmetical Errors:

- a) Provided that the Bid is substantially responsive, the Purchaser shall correct arithmetical errors on the following basis:
 - i. if there is a discrepancy between the unit price and the line item total that is obtained by multiplying the unit price by the quantity, the unit price shall prevail and the line item total shall be corrected, unless in the opinion of the Purchaser there is an obvious misplacement of the decimal point in the unit price, in which case the line item total as quoted shall govern and the unit price shall be corrected;
 - ii. if there is an error in a total corresponding to the addition or subtraction of subtotals, the subtotals shall prevail and the total shall be corrected; and
 - iii. if there is a discrepancy between words and figures, the amount in words shall prevail, unless the amount expressed in words is related to an arithmetic error, in which case the amount in figures shall prevail subject to (a) and (b) above.
- b) Bidders shall be requested to accept correction of arithmetical errors. Failure to accept the correction in accordance with the same, shall result in the rejection of the Bid.

8. Evaluation of Bid:

- a) Technical bids will be evaluated for suitability as per documentary validation, eligibility criteria and technical specifications laid out in this tender document. The bids found suitable will be recommended by the Procurement committee and after approval of competent authority shall be deemed as technically suitable offers. The technically qualified bidders will be informed accordingly and commercial bids of such offers will be evaluated on a suitable designated time and date. Unopened commercial bids of the other bidders, who are not found technically suitable will be returned.
- b) IIT Dharwad will evaluate technical and commercial acceptable offers on landed **Net Price basis**.
- c) In case any BIDDER is silent on any clauses mentioned in this tender documents, IIT Dharwad shall construe that the BIDDER had accepted the clauses as per the invitation to tender no further claim will be entertained.
- d) No revision in the terms and conditions quoted in the offer will be entertained after the last date and time fixed for receipt of tenders.

9. (a) Price Bid (For Import Supplies to be quoted in Foreign Currency only):

- i. Quoting of Price(s): **It is mandatory to quote prices in foreign currency and DDP basis only.**
- ii. **PRICE BID must be submitted in enclosed Price Bid Format only (designed for imports only).**
- iii. If the price is not quoted in Price Bid Format provided in the tender document then, IIT Dharwad will reject the bid. The bidders are required to attach their blank price bid format in technical bid documents for this purpose (without indicating the price quoted).
- iv. **If the bidder wishes to give pricing details, it may be attached in separate sheet. It is requested not to quote optional or multiple items, otherwise your quote may be rejected.**
- v. **The bidders are requested to quote only one option satisfying the tender terms & not multiple options.**
- vi. Quantity: The quantity mentioned in the tender can be increased or decreased to any extent depending upon the actual requirement.



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(b) Price Bid (For Indigenous Supplies to be quoted in INR only):

- i. Quoting of Price (s): Price quoted should be in Indian Rupees only and free delivery at IIT Dharwad Campus site.
- ii. PRICE BID must be submitted in enclosed Price Bid Format only (designed for indigenous/local supplies only).
- iii. Prices should include all the taxes including concessional GST @5% and all other duties/levies.
- iv. If the price is not quoted in Price Bid Format provided in the tender document then, IIT Dharwad will reject the bid. The bidders are required to attach their blank price bid format in technical bid documents for this purpose (without indicating the price quoted).
- v. If the bidder wishes to give pricing details, it may be attached in separate sheet. **It is requested not to quote optional or multiple items, otherwise your quote may be rejected. The bidders are requested to quote only one option satisfying the tender terms & not multiple options.**

10. Corrupt & Fraudulent Practices:

IIT Dharwad requires that bidders, suppliers, contractors and consultants, if any, observe the highest standard of ethics during the procurement and execution of such contracts. In pursuit of this policy, the terms set forth below are defined as follows:

- a) "Corrupt practice" means the offering, giving, receiving, or soliciting, directly or indirectly, of anything of in kind/value to influence the action of a public official in the procurement process or in contract execution;
- b) "Fraudulent practice" means a misrepresentation or omission of facts in order to influence a procurement process or the execution of a contract;
- c) "Collusive practice" means a scheme or arrangement between two or more bidders, designed to establish bid prices at artificial, non- competitive levels; and
- d) "Coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the procurement process or affect the execution of a contract;

IIT Dharwad 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.

11. Cancellation of Tender:

- a) Notwithstanding anything specified in this tender document, Purchaser/IIT Dharwad in his sole discretion, unconditionally and without assigning any reasons, reserves the rights:
 - i. To accept or reject lowest tender or any other tender or all the tenders.
 - ii. To accept any tender in full or in part.
 - iii. To reject the tender, offer not confirming to the tender terms.
 - iv. To cancel the tender at any stage during the evaluation & before award of work
- b) Offer which deviates from the vital conditions (as illustrated below) of the tender shall be rejected:
 - i. Non-submission of complete offers as mentioned in the tender document,
 - ii. Receipt of offers after due date and time and or by email / fax (unless specified otherwise).
 - iii. Receipt of offers in open condition.
 - iv. Conditional Tenders and Unsigned Tenders will also be rejected.

12. Delivery:

The successful BIDDER should deliver the material as per tender document/purchase order. **The successful bidder should also emboss stickers of purchase order number on the material to be delivered at IIT Dharwad.**

Sd/-
Assistant Registrar (MMD), IIT Dharwad
(For and on behalf of Director, IIT Dharwad)



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Section III: Conditions of Contract

1. Award of Contract:
 - a) IIT Dharwad shall award the contract to the technically qualified eligible BIDDER whose bid has been determined as the lowest evaluated commercial bid under this tender subject.
 - b) If more than one BIDDER happens to quote the same lowest price, IIT Dharwad reserves the right to award the contract to more than one BIDDER or any BIDDER.
2. **Prices & Taxes applicable (Customs Duty / IGST / SGST / CGST):**
 - a) **For Import Supplies (bids in Foreign currency) - As per Govt. of India Notification No. 51/96-Customs dt. 23rd July 1996; IIT Dharwad is exempted from payment of Custom duty for all research equipment. The applicable rate of tax/duty in case of imports shall be 5.5% only (including Social Welfare Surcharge). We shall provide all the documents under this notification to enable you to clear the goods without payment of Custom duty, whenever required. Please state clearly the kind of certificate required along with the desired format (e.g. Custom Duty Exemption Certificate – CDEC, copy of DSIR certificate, KYC Form, Copy of Importer Exporter Code, copy of GST & PAN registration, any other declaration form etc. from IIT Dharwad).** The supplier shall pay and bear all other liabilities, taxes and duties not specifically agreed by the Purchaser in the contract.
 - b) **For Indigenous Supplies (bids in INR) - As per Govt. of India Notification No. 47/2017-Integrated Tax (Rate) dt. 14th November 2017, Notification No. 45/2017-Central Tax (Rate) dt. 14th November 2017 and Notification No. 45/2017-Union Territory Tax (Rate) dt. 14th November 2017; IIT Dharwad is eligible to avail concessional GST rates. The applicable rate of IGST shall be 5% in case of Inter-state purchase and shall be the same as 5% (CGST @2.5% & SGST @2.5%) in case of purchases within the state. We shall provide the concessional GST certificate under this notification to enable you to deliver the goods as per the rates specified and to raise an invoice subsequently on this rate only. The supplier shall pay and bear all other liabilities, taxes and duties not specifically agreed by the Purchaser in the contract.**
3. Pre-installation:

Please also mention the pre-installation requirements for the equipment like ambient temperature, humidity, civil work, weather specifications, power specifications, etc. When all items are provided, full performance satisfaction should be demonstrated to IIT Dharwad.
4. Installation:
 - a) BIDDER shall be responsible for installation / demonstration wherever applicable and for after sales service during the warranty period and thereafter as mentioned in the contract.
 - b) Installation demonstration to be arranged by the supplier within the quoted price and the same is to be done within 15 days of the arrival of the equipment at site or whenever informed by IIT Dharwad.
5. Training and pre-installation checks:
 - a) The BIDDER shall also submit training proposal for the operation and maintenance to the personnel of IIT Dharwad on the offered equipment/machinery.
 - b) Wherever needed, our technical persons should be trained by the supplier at the project site free of cost. In case the person is to be trained at supplier's site abroad or in India, it should be mentioned in the bid clearly. The supplier should bear all the expenses for any such training or for any pre-installation check to be conducted by officials of IIT Dharwad including 'to & fro' fares and lodging & boarding charges.



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6. a) **Terms of Payment (For Import Supplies and quotes in Foreign currency):**
- i. 100% Payment by Letter of Credit (90% payment will be released on receipt of documents such as Air Way Bill/ Bill of Lading, Certificate of Origin, Copy of Insurance, Packing List, Invoice copies in original & any other document specified by IIT Dharwad as per LC terms without any discrepancies and balance 10% will be paid after satisfactory delivery, installation, commissioning, demonstration, training & testing). The Bill of Entry is required to be filed in the name of IIT Dharwad. IIT Dharwad does not pay any advance payment to party. Any request of Advance payment will be rejected summarily.
 - ii. A draft Letter of Credit (LoC/LC) will be shared with the successful bidder upon acceptance of Purchase order and submission of Proforma Invoice & Bank Guarantee (of 10% value of Purchase Order).
 - iii. Any request for change in payment terms and conditions will not be accepted. In case, if it is necessary to change payment terms and conditions then IIT Dharwad will not pay any additional charges. If the above payment terms conditions are not acceptable then tender may be rejected.
- b) **Terms of Payment (For Indigenous Supplies and quotes in INR):**
- i. Payment within 30 days from the date of delivery, installation, commissioning, demonstration, training, testing and receipt of Acceptance Certificate of concerned Department / Section / Materials Management Division, IIT Dharwad.
 - ii. Payment shall be made by electronic fund transfer or such other mode offered by the Bank.
 - iii. IIT Dharwad does not pay advance payment to party. Any request of Advance payment will be summarily rejected.
7. **Transfer and Subletting:**
The seller shall not sublet, transfer, assign or otherwise part with the acceptance to the tender or any part thereof, either directly or indirectly, without the prior written permission of the Purchaser.
8. **Force Majeure:**
Force Majeure will be accepted on adequate proof thereof.
9. **Specification and Samples:**
The suppliers shall supply the stores in accordance with the specifications/ descriptions of stores given in the acceptance of tender. The Purchaser reserves the rights to alter the description of stores including drawings given in the acceptance of tender. In the event any such alteration result in any implication to the deliver and price, such implication shall be mutually agreed between the Purchaser and supplier. In case certified sample has been issued by the Purchaser and the Specifications / Drawings also exist in the acceptance of tender then the certified sample will govern the supply to the extent of material, workmanship and finished product.
10. **Supervision of Erection and Commissioning:**
Successful BIDDER shall depute concerned specialist, for supervision of erection & commissioning of the machine to be carried out. The successful BIDDER shall make necessary arrangement at their own expenses for stay, transport and other expenses of their specialist during their stay in Dharwad which also includes imparting free of cost training to IIT Dharwad personnel.



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11. EARNEST MONEY DEPOSIT (GFR 2017 Rule 170):

- i. **Earnest Money Deposit is mandatory to be enclosed in the tender.**
- ii. While submitting bid, the BIDDER shall deposit an amount mentioned in tender document as Earnest Money, with the IIT Dharwad through the following instruments:
A confirmed Bank Guarantee or Demand Draft by an Indian Nationalized Bank/Scheduled bank promising payment of the guaranteed sum to the BUYER without any demur whatsoever and without seeking any reasons whatsoever.
- iii. The Earnest Money shall be valid up to a period of 90 days or the complete conclusion of the contractual obligations.
- iv. Bidders registered with any of the following agencies/ bodies as per Public procurement policy for Micro & Small Enterprises (MSE) order 2012 are exempted categories from payment of EMD provided that the registration certificate issued by any one of these below mentioned agencies must be valid as on close date of tender. Micro small or medium enterprises who have applied for registration or renewal of registration with any of these agencies/bodies but have not obtained the valid certificate as on close date of tender are not eligible for exemption.
 - a. Khadi and Village Industries Commission (KVIC)
 - b. National Small Industries Corporation (NSIC)
 - c. Any other body specified by Ministry of MSME/GOI
- v. **EMD Exemption against NSIC/MSME and KVIC certificate will not be applicable for import purchases (and bids quoted in Foreign currency).**
- vi. No interest shall be payable by the BUYER to the BIDDER on Earnest Money for the period of its currency.
- vii. If successful bidder fails to submit the Performance Guarantee Bond within 15 days from the date of placing of Purchase Order, then purchase order may be cancelled and then EMD will be forfeited.
- viii. If there is any difficulty in submitting Bank Guarantee then Demand draft can be submitted in the favour of 'The Registrar, IIT Dharwad' payable at Hubli-Dharwad.
- ix. Return of EMD: In case of successful BIDDER, EMD will be returned within 30 days from the date of submission of Performance Guarantee Bond.
- x. For unsuccessful bidders, EMD will be returned within 30 days from the date of placing the Purchase Order.



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12. Performance Guarantee (GFR 2017 Rule 171):

- i. Performance Guarantee Bond is mandatory.
- ii. Successful tenderer/ bidder should submit performance guarantee on or before 15 days from the date of issue of order acknowledgement. The PBG to be furnished in the form of bank guarantee as per proforma, for an amount covering 10% of the purchase order value.
- iii. The Performance Guarantee should be established in favour of "The Registrar, IIT Dharwad".
- iv. PBG to be established through any of the National Banks/Scheduled bank (whether situated at Dharwad or outstation) with a clause to enforce the same on their local branch or any scheduled bank (other than National bank). Bonds issued by co-operative banks will not be accepted.
- v. Performance Guarantee Bond shall be for the due and faithful performance of the contract and shall remain binding, notwithstanding such variations, alterations for extensions of time as may be made, given, conceded or agreed to between the successful tenderer and the purchaser under the terms & conditions of acceptance to the tender.
- vi. The successful tenderer is entirely responsible for due performance of the contract in letter and spirit and all other documents referred to in the acceptance of tenders.
- vii. The PBG shall be kept valid during the period of contract and shall continue to be enforceable for a period (as mentioned in the tender document) or up to warranty period whichever is later from the date of order acknowledge. In case PBG needs extensions up to warranty period then supplier shall initiate extensions to PBG one month prior to expiry of PBG. For successful suppliers, if PBG is not submitted within **15 days** from the date of Order Acknowledgement, then the Purchase Order may be cancelled with forfeiting of EMD.
- viii. **No interest shall be payable by the buyer to the Bidder on PBG.**



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FORMAT FOR EARNEST MONEY DEPOSIT / BID BOND

(To be typed on Non-judicial stamp paper of the value of One Hundred Indian National Rupees)

{TO BE ESTABLISHED THROUGH ANY OF THE NATIONALIZED BANKS/SCHEDULED BANKS WITH A CLAUSE TO ENFORCE THE SAME ON THEIR LOCAL BRANCH OR ANY SCHEDULED BANK (OTHER THAN NATIONALIZED BANK). BONDS ISSUED BY CO-OPERATIVE BANKS ARE NOT ACCEPTED}

LETTER OF GUARANTEE

To,
The Assistant Registrar (MMD)
Indian Institute of Technology Dharwad
Dharwad, Karnataka – 580 011

IN ACCORDANCE WITH YOUR TENDER No: dated.....for supply of, M/s. (hereinafter called the “Bidder”) having its Registered Office at, wish to participate in the said bid for the supply as an irrevocable Bank Guarantee against Earnest Money Deposit for an amount of Rs. (Rupees.....) valid up to (90 days from the date of issue of Bank Guarantee), is required to be submitted by the bidder as a condition precedent for participating in the said bid, which is liable to be forfeited by the Purchaser on

- (1) the withdrawal or revision of the offer by the bidder within the validity period,
- (2) Non acceptance of the Letter of Intent/Purchase order by the Bidder when issued within the validity period,
- (3) failure to execute the contract as per contractual terms and condition with in the contractual delivery period and
- (4) on the happening of any contingencies mentioned in the bid documents.

During the validity of this Bank Guarantee:

We,(Bank name) having its registered Office at guarantee and undertake to pay immediately on first demand by IIT Dharwad, the amount of Rs..... (Rupees.....) without any reservation, protest, demur and recourse. Any such demand made by the IIT Dharwad shall be conclusive and recourse. Any such demand made by the purchaser shall be binding on the Bank irrespective of any dispute or difference raised by the Bidder.

The Guarantee shall be irrevocable and shall remain valid up to(180 days from the date of issue of Bank Guarantee) If any further extension is required, the same shall be extended to such required period on receiving instruction form the Bidder, on whose behalf the is Guarantee is issued.

Notwithstanding anything contained herein:

* Our liability under this Bank Guarantee shall not exceed Rs..... (Rupees.....).

*This Bank Guarantee shall be valid up to(date).

*We are liable to pay the guaranteed amount or any part thereof under this Bank Guarantee Only and only if you serve upon us a written claim or before (date).

This Bank further agrees that the claims if any, against this Bank Guarantee shall be enforceable at our branch office at situated at (Address of local branch).

Yours sincerely,

Date:

Signature and seal of the guarantor:
Name of Bank:

Address:

Instruction to Bank: Bank should note that on expiry of Bond Period, the Original Bond will not be returned to the Bank. Bank is requested to take appropriate necessary action on or after expiry of bond period.



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FORMAT FOR PERFORMANCE GUARANTEE BOND

(To be typed on Non-judicial stamp paper of the value of One Hundred Indian National Rupees)

{TO BE ESTABLISHED THROUGH ANY OF THE NATIONALIZED BANKS/SCHEDULED BANKS WITH A CLAUSE TO ENFORCE THE SAME ON THEIR LOCAL BRANCH OR ANY SCHEDULED BANK (OTHER THAN NATIONALIZED BANK). BONDS ISSUED BY CO-OPERATIVE BANKS ARE NOT ACCEPTED}

To,
The Assistant Registrar (MMD)
Indian Institute of Technology Dharwad
WALMI Campus, Dharwad – 580011

LETTER OF GUARANTEE

WHEREAS Indian Institute of Technology Dharwad (Buyer) have invited Tenders vide Tender No..... Dt. for purchase of AND WHEREAS the said tender document requires that any eligible successful tenderer (seller) wishing to supply the equipment / machinery, etc. in response thereto shall establish an irrevocable Performance Guarantee Bond in favour of “**The Registrar, Indian Institute of Technology Dharwad**” in the form of Bank Guarantee for Rs. {**@10% (ten percent) of the purchase value**} and valid till **one year or up to OEM warranty period whichever is later** from the date of issue of Performance Guarantee Bond is required be submitted within 15 (Fifteen) days from the date of Order Acknowledgment as a successful bidder.

NOW THIS BANK HEREBY GUARANTEES that in the event of the said tenderer (seller) failing to abide by any of the conditions referred in tender document / purchase order / performance of the equipment / machinery, etc. this Bank shall pay to Indian Institute of Technology Dharwad on demand and without protest or demur Rs (Rupees.....).

This Bank further agrees that the decision of Indian Institute of Technology Dharwad (Buyer) as to whether the said Tenderer (Seller) has committed a breach of any of the conditions referred in tender document / purchase order shall be final and binding.

We, (name of the Bank & branch) hereby further agree that the Guarantee herein contained shall not be affected by any change in the constitution of the Tenderer (Seller) and/ or Indian Institute of Technology Dharwad (Buyer).

Notwithstanding anything contained herein:

- i. Our liability under this Bank Guarantee shall not exceed Rs.(Indian Rupees only).
- ii. This Bank Guarantee shall be valid up to(date) and
- iii. We are liable to pay the guaranteed amount or any part thereof under this bank guarantee only and only if IIT Dharwad serve upon us a written claim or demand on or before(date).

This Bank further agrees that the claims if any, against this Bank Guarantee shall be enforceable at our branch office at situated at (Address of local branch).

Yours sincerely,

Date:

Signature and seal of the guarantor:

Name of Bank:

Address:

Instruction to Bank: Bank should note that on expiry of Bond Period, the Original Bond will not be returned to the Bank. Bank is requested to take appropriate necessary action on or after expiry of bond period.



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Section IV – Complete Schedule of Requirements and Compliance

| This section has following compliance requirements: | |
|--|---|
| i | Compliance for commercial terms and conditions of tender |
| ii | Compliance for technical specifications of the equipment to be supplied |
| iii | Bidders information & Reasonability of prices |

i. Table of compliance for commercial terms & conditions of tender (to be filled by bidder)

(NO FIELD TO BE LEFT BLANK)

| S. No. | Terms and Conditions | IIT Dharwad tender requirements | Response by Bidder M/s |
|--------|---|--|------------------------|
| 1 | Nature of supply (to be specified) | Imported Item (or) Indigenous/Local supply | |
| 2 | Price Bid Format (to be specified) (Refer point 9 of Section-II) | Section-V (a) for Imports & Forex (or) Section- V (b) for Local & INR | |
| 3 | Price Bid Currency (to be specified) | If Import, then Forex only (or) If Indigenous/Local then INR only | |
| 4 | Delivery terms (to be specified) | If Import, only DDP Mode (or) If Indigenous/Local then Door Delivery (Refer point 17 of Section-I) | |
| 5 | Freight & Insurance | Confirm point 18 of Section-I | |
| 6 | Comprehensive On-site Warranty (as per technical specifications) | Confirm point 19 of Section-I | |
| 7 | Installation & Demo | Confirm point 20 of Section-I | |
| 8 | Custom Duty (If import & Forex) | Applicable rate @5.5% Confirm point 2-(a) of Section-III | |
| 9 | GST Rate (If Local supply in India) | Applicable rate @5% Confirm point 2-(b) of Section-III | |
| 10 | Training & Pre-installation checks | Confirm point 5 of Section-III | |
| 11 | Terms of Payment | Confirm point 6 of Section-III | |
| 12 | EMD | Confirm point 11 of Section-III & point 12 (a) of Section-I | |
| 13 | PBG | Confirm point 12 of Section-III | |
| 14 | Complete tender document copy | Signed & stamped copy required | |
| 15 | PAN | Copy of PAN required | |
| 16 | GST | Copy of GST certificate required | |
| 17 | ITRs (2016-17 to 2018-19) | Last 3 financial years' ITR required | |
| 18 | Proof of Business existence | For a period of more than 3 years required | |
| 19 | Previous Experience | At-least one performance certificate with | |



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| | | | |
|----|------------------------------------|---|--|
| | (Refer point 12 of Section-I) | Purchase Order copy is required | |
| 20 | Blacklisting status | Certificate required to confirm the status | |
| 21 | Technical compliance for equipment | Please complete the table in point (ii) under Section-IV to establish the technical eligibility | |
| 22 | OEM Details | Please attach the OEM details | |
| 23 | Bidders Information | Please complete the table in point (iii) under Section-IV to ascertain all relevant details | |
| 24 | Reasonability of prices | | |

ii. Table of compliance for technical specifications of the equipment to be supplied (to be filled by bidder)

1. Computerised 4 Stroke SI Engine Setup Specification

Qty.:01 Nos.

Four-stroke SI engine setup with Eddy current dynamometer

The setup must:

- Enable study of engine performance for brake power, indicated power, frictional power, BMEP, IMEP, brake thermal efficiency, indicated thermal efficiency, Mechanical efficiency, volumetric efficiency, specific fuel consumption, A/F ratio, heat balance, combustion analyses, P_θ- PV plots among others
- Enable software based Engine Performance Analysis for on line performance evaluation.
- Possess Data logging, editing, printing and export functionalities
- Display engine jacket cooling water inlet & outlet temperature and calorimeter temperature digitally
- Measure calorimeter and cooling water flow rates
- Entire setup should be mounted on a strong and firm base frame.

Technical Specifications

| Sl.No. | Description | Technical specifications required | Whether complied fully (Yes / No) | Specifications of the quoted product |
|--------|--------------------|---|-----------------------------------|--------------------------------------|
| 1 | Product | Computerised 4 Stroke water-cooled Petrol Engine test setup | | |
| 2 | Engine | Single cylinder, 4 Stroke, Petrol, Water cooled, 500-750 cc, CR range 6-18, Fuel injected | | |
| 3 | Power | ≥3 kW @ 1500 rpm | | |
| 4 | Compression ratio | Variable with multi-fuel capability having a range of 6-18 | | |
| 5 | Control unit | Programmable open ECU at least for petrol operation | | |
| 6 | Dynamometer | Eddy current type for engine loading, water cooled | | |
| 7 | Air box | Corrosion free metal fabricated with fuel flow meter and manometer | | |
| 8 | Temperature sensor | Thermocouple, Type K | | |
| 9 | Fuel tank | Capacity ≥ 15 litres with glass fuel metering column | | |



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| Sl.No. | Description | Technical specifications required | Whether complied fully (Yes / No) | Specifications of the quoted product |
|--------|--|--|-----------------------------------|--------------------------------------|
| 10 | Load indicator | Digital, Range: 0-50 Kg, Supply 230 V AC | | |
| 11 | Load sensor | Load cell, range 0-50 Kg | | |
| 12 | Software | Independent complete software / Labview template designed for engine performance analysis | | |
| 13 | Temperature indicator | Digital, multi-channel with selector switch | | |
| 14 | Pump Type | Monoblock | | |
| 15 | Digital Speed indicator | Non-contact type sensor | | |
| 16 | Cylinder pressure sensor including charge amplifier | Piezo type with low noise cable and maximum pressure range > 300 bar (reputed make like Kistler/AVL/PCB) | | |
| 17 | Fuel flow transmitter | Range 0 - 500 mm WC | | |
| 18 | Air flow transmitter | Pressure transmitter, Range (-) 250 mm WC | | |
| 19 | Data Acquisition system | NI based USB interface with ≥ 200 kS/s | | |
| 20 | Programmable open ECU at least for petrol mode operation | Completely built with potted enclosure with fully supporting software and connecting cables | | |
| 21 | Propeller shaft | Universal joints | | |
| 22 | Crank angle sensor | Reputed make – 1° res., at least 5000 rpm with TDC pulse | | |

Required features:

- Variable compression ratio with ability to change CR without stopping the engine
- Multi-fuel capability (with/without open ECU for fuels other than petrol) with diesel operation including injection point control
- In petrol mode it should operate with programmable open ECU, Throttle position sensor, Fuel injector, Fuel pump, Ignition coil and trigger sensor among others. Open ECU must be capable of and not limited to:
 - Fuel control with fuel table
 - Injection timing control
 - Acceleration, Deceleration, Barometric pressure, Air temperature, Coolant temperature, battery and starting compensations
- With electric starter motor arrangement
- Cooling water system with flow rate measurement and inlet and outlet temperature indicators

All the sensors and equipment must be from reputed manufactures. Set up should come with suitable software for data logging and data analysis. Accuracy of the sensors should be <0.1 % of full scale values.

The bidder must submit/satisfy the following documents/conditions with the Technical Bid:

- Copy of at-least one performance certificate (along with purchase order) of supplying similar item/s to IITs/ NITs/ IISc/ IISERs/ Central Universities/ laboratories of national importance.
- If required supplier must give demonstration of quoted model to check the technical specifications.
- OEM or Supplier or its authorized service center should have facility of service in India (Supporting document should be provided in technical bid)



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2. Computerised 4-Stroke CI Engine Setup Specification

Qty.:01 Nos.

Four-stroke CI engine setup with Eddy current dynamometer

The setup must:

- Enable study of engine for brake power, BMEP, brake thermal efficiency, volumetric efficiency, specific fuel consumption, air fuel ratio and heat balance.
- Enable software based Engine Performance Analysis for on line performance evaluation.
- Possess Data logging, editing, printing and export functionalities
- Display engine jacket cooling water inlet & outlet temperature and calorimeter temperature digitally
- Measure calorimeter and cooling water flow rates
- Entire setup should be mounted on a strong and firm base frame.

Technical Specifications

| Sl.No. | Description | Technical specifications required | Whether complied fully (Yes / No) | Remarks if any |
|--------|---|--|-----------------------------------|----------------|
| 1 | Product | Computerised 4 Stroke water-cooled Diesel Engine test setup | | |
| 2 | Engine | Single cylinder, 4 Stroke, common rail injection, 500-750 cc, Water cooled, Variable compression ratio (12-18), with Solenoid injectors and progressive EGR system | | |
| 3 | Power | Greater than 3.0 kW at 1500 rpm, | | |
| 4 | Compression ratio | Variable, having a range of 12-18 | | |
| 5 | Dynamometer | Type eddy current, water cooled | | |
| 6 | Air box | Corrosion free metal with orifice meter and manometer | | |
| 7 | Fuel tank Capacity | ≥ 15 lit with glass fuel metering column | | |
| 8 | Load indicator | Digital, Range: 0-50 Kg, Supply 230 V AC | | |
| 9 | Load sensor | Load cell, type strain gauge, range 0-50 Kg | | |
| 10 | Temperature sensor | Thermocouple, Type K | | |
| 11 | Software | Labview template designed for engine performance analysis | | |
| 12 | Cylinder pressure sensor including charge amplifier | Piezo type with low noise cable and maximum pressure range > 300 bar (reputed make like Kistler/AVL/PCB) | | |
| 13 | Pump Type | Monoblock | | |
| 14 | Digital Speed Measurement | Non-contact type sensor | | |
| 15 | Temperature indicator | Digital, multi-channel with selector switch | | |



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| | | | | |
|----|---|--|--|--|
| 16 | Cylinder pressure sensor including charge amplifier | Piezoelectric type with low noise cable and maximum pressure range of 250 bar, linearity less than 0.3 % FSO, shock resistance greater than 1600 g. Make: Kistler/AVL/PCB | | |
| 17 | Crank angle Sensor | Reputed make, res. 1° CA with TDC pulse | | |
| 18 | Fuel flow transmitter | DP transmitter, Range 0-500 mm WC | | |
| 19 | Air flow transmitter | Pressure transmitter, Range (-) 250 mm WC | | |
| 20 | Data acquisition system | NI based USB interface with ≥ 200 kS/s | | |
| 21 | Common rail | Pressure sensor and pressure regulating valve | | |
| 22 | Propeller shaft | Universal joints | | |
| 23 | Programmable open ECU for diesel operation | Solenoid injector driver along with fully supporting software and connecting cables | | |

Required features:

- Programmable open ECU operation for optimization of Engine performance. Open ECU must be capable of and not limited to:
 - Start control
 - Speed control on-demand
 - Idle RPM closed-loop control
 - Control of injection timing
 - Pilot injection
 - Closed-loop Fuel pressure
- Diesel operation with common rail injection, fuel pump.
- Common rail pressure sensor, pressure regulation valve, crank position sensor and required wiring harnesses
- Cooling water system with flow rate measurement and inlet and outlet temperature indicators

All the sensors and equipment must be from reputed manufactures. Set up should come with suitable software for data logging and data analysis. Accuracy of the sensors should be <0.1 % of full scale values.

The bidder must submit/satisfy the following documents/conditions with the Technical Bid

- Copy of at-least one performance certificate (along with purchase order) of supplying similar item/s to IITs/ NITs/ IISc/ IISERs/ Central Universities/ laboratories of national importance.
- If required supplier must give demonstration of quoted model to check the technical specifications.
- OEM or Supplier or its authorized service center should have facility of service in India (Supporting document should be provided in technical bid)



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iii. Table for bidder information & reasonability of prices (to be filled by bidder)

Bidders Information

| | | |
|----|--|--|
| 1. | Name of the Bidder | |
| 2. | Address of the Bidder | |
| 3. | PAN No. | |
| 4. | GST No. | |
| 5. | State of GST Registration | |
| 6. | E-mail (for the purpose of official communication) | |
| 7. | Contact Person's Name & Designation | |
| 8. | Mobile No. | |
| 9. | Bank Details of the Bidder: a. Name of the A/c Holder b. Name of the Bank c. Branch name d. Account No. e. IFSC Code f. Any other detail | |

(Authorised signature & seal of the bidder)



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Reasonability of Prices

(Please quote best minimum prices applicable for premier Educational and Research Institution of National Importance)

Previous Supply Orders

Name of the Firm _____

| Order placed by (Full address of Purchaser) | Order No. and Date | Quantity | Value of Order | Date of completi on of delivery as per contract | Remarks indicating reasons for late delivery, if any and justification for price difference of their supply order & that quoted for IIT Dharwad | Has the Equipment been installed satisfactorily (Attach a Certificate from the Purchaser/ Consigner) | Contact Person along with Telephone No., Fax No. and e- mail address. |
|---|--------------------------|----------|-------------------|--|--|--|---|
| | | | | | | | |

(Authorised signature & seal of the bidder)



॥ सा विद्या या विमुक्तये ॥
भारतीय प्रौद्योगिकी संस्थान धारवाड
Indian Institute of Technology Dharwad

INDIAN INSTITUTE OF TECHNOLOGY DHARWAD
Off Pune Bengaluru Highway, Near High Court,
Dharwad, Karnataka - 580011

Section V (a) - PRICE BID

for Imported Supplies (to be quoted only in Foreign currency)

| Sl. No. | Short Description of Item | Qty. | HSN Code / SAC Code | Total Bid Price* (in FOREX & DDP Basis) |
|---------|---|---------|---------------------|--|
| 1. | SUPPLY, INSTALLATION AND DEMONSTRATION OF LABORATORY EQUIPMENT (4 Stroke SI Engine Setup) | 01 Nos. | | |
| 2 | SUPPLY, INSTALLATION AND DEMONSTRATION OF LABORATORY EQUIPMENT (4 Stroke CI Engine Setup) | 01 Nos. | | |

* Please refer clause 17 (Section-I), 9-a (Section-II) & 2-a (Section-III) before quoting the prices.

* In case the bidder intends to provide the break-up of prices quoted, then a separate sheet to be attached.

(Authorised signature & seal of the bidder)

Note-1: Price Bid should be submitted in given format only.

Note-2: The quantities mentioned above are subject to upward and downward revision, depending on the requirement of IIT Dharwad in future.



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Off Pune Bengaluru Highway, Near High Court,
Dharwad, Karnataka - 580011

Section V (b) - PRICE BID

for Indigenous / Local Supplies (to be quoted only in INR)

| Sl. No. | Short Description of Item | Qty. | HSN Code / SAC Code | Amount Quoted* (in INR only) |
|---------|---|---------|---------------------|------------------------------|
| 1. | SUPPLY, INSTALLATION AND DEMONSTRATION OF LABORATORY EQUIPMENT (4 Stroke SI Engine Setup) | 01 Nos. | | (Please quote base price) |
| | SUPPLY, INSTALLATION AND DEMONSTRATION OF LABORATORY EQUIPMENT (4 Stroke CI Engine Setup) | 01 Nos. | | |
| | Discount offered (if any) | | | |
| | IGST / CGST / SGST @5% (Concessional GST applicable for IIT Dharwad against certificate) | | | |
| | GRAND TOTAL BID PRICE | | | |

* Please refer clause 17 (Section-I), 9-b (Section-II) & 2-b (Section-III) before quoting the prices.

* In case the bidder intends to provide the break-up of prices quoted, then a separate sheet to be attached.

(Authorised signature & seal of the bidder)

Note-1: Price Bid should be submitted in given format only.

Note-2: The quantities mentioned above are subject to upward and downward revision, depending on the requirement of IIT Dharwad in future.