



तेजपुर विश्वविद्यालय / TEZPUR UNIVERSITY  
(केंद्रीय विश्वविद्यालय / A Central University)  
कुल सचिव का कार्यालय / OFFICE OF THE REGISTRAR  
तेजपुर-784028 :: असम / TEZPUR-784028 :: ASSAM

**NOTICE INVITING QUOTATION (NIQ)**

ET-NIQ-.....1303.....DT-..17/12/2019...

Online Tenders in 02 Bid System (Technical and Financial) are invited from reputed manufacturers/authorized dealers/vendors for supply, installation & commissioning etc. of the following items required for the AICTE-MODROB Project of Department of Mechanical Engineering, Tezpur University.

**Items:**

Sl. No	Item	Approx Quantity	Approximate Unit Value in ₹
1	Mock Layout of Car wiring	01	1.0 lac
2	Ignition System of an Automobile	01	0.70 lac
3	Fuel System of Petrol Engine (Actual Working Model)	01	0.80 lac
4	Lubrication System of an Automobile	01	1.0 lac
5	Air Brake Actual Working	01	0.80 lac
6	3/ 4 Cylinder Petrol Engine Test Rig <sup>##</sup>	01	3.0 lacs
7	Multi Cylinder Diesel Engine Test Rig <sup>##</sup>	01	4.0 lacs
8	Computerized Variable Compression Ratio Multi Fuel (Petrol/ Diesel) Engine <sup>##</sup>	01	7.0 lacs
9	Compressor test rig (Manual)	01	1.0 lac

Note: Either item at Sl. No.6 and 7 or 8 may be considered for procurement.

***(Detail Technical Specification/Compliance Sheet and BoQ are attached/uploaded separately)***

**General Information about the NIQ**

Last date and time for submission of Bids: 06.01.2020 (2.00 PM)

Date and Time of opening of Bids: 08.01.2020 (4.00 PM)

Place of Opening of Bids: Tezpur University

**GENERAL TERMS & CONDITIONS:**

1. No separate tender paper will be issued from the office; one should only download the specifications from the CPP Portal of Govt. of India.
2. GST: As per Gol Notification dated 14.11.2017 GST % for Public Funded Research Institution or a University has been reduced to 5% for certain goods and services. Hence, reduced rate of GST shall be paid if applicable on the tendered items. Exemption Certificate will be provided on request.
3. The rates should be preferably quoted in Indian Rupee and FOR Tezpur University, Napaam basis. Charges for clearing and transportation should be in the scope of supply.
4. Quotations should be accompanied by i) An EMD (in the form of Demand Draft/Banker Cheque) @ 2% on the given approximate/estimated value of the quoted item(s) to be rounded off to nearest Ten (10) drawn in favor of Registrar, Tezpur University, payable at Tezpur. No request for consideration of earlier deposited EMD will be considered. ii) A non-refundable application (quotation/tender) fee of ₹. 1000.00 (Rupees One Thousand) only must be paid only by Demand

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Draft/Banker Cheque drawn in favour of Registrar, Tezpur University payable at Tezpur. iii) The original copies of the EMD & Tender Fee should be deposited/submitted/reach the office of the undersigned before opening of the Bids in an envelope superscribed as "Tender Fee and EMD for ET-NIQ-4303.....DT-17/12/19....." addressed to the Assistant Registrar-GA, Tezpur University. Failure to do so may result in rejection of the bid.

5. Exemption: To Bidders who are MSME/NSIC registered may claim exemption from payment of EMD only subject to submission of valid documents in support of their claim. Payment of tender fee is a must and is not exempted.
6. The rates should be exclusive of taxes and applicable tax % should be clearly indicated.
7. Applicable levies, surcharge and discounts should be clearly indicated item wise.
8. The rates should be quoted along with supporting documents of specifications and technical features and list of users.
9. The system must be installed at the laboratory, and after installation a basic training must also be provided by the supplier or their Indian counterpart without any additional costs.
10. All the quotations must be accompanied with supporting documents and / or literature.
11. Demonstration may be sought from the vendors for authentication of quoted specification.
12. Details of availability of after sales support will have to be furnished. After sales support directly from manufacturer and from Assam (Guwahati / Tezpur) will be preferred.
13. The University is exempted from paying Custom and Excise duty.
14. Proprietary items should be quoted with sole Manufacturer/Distributorship certificate.
15. Warranty/Guarantee period should be specifically mentioned in the quotation.
16. No Advance payment will be made. However, for foreign supplier, advance payment will be made either by FDD/Wire Transfer/LC. In such cases 10% Performance Bank Guarantee should be submitted before issuing FDD/Wire Transfer/LC, covering the warranty period.
17. Performance Bank Guarantee also has to be submitted for Major equipment's of Indian origin, covering the warranty period.
18. Items of Foreign origin should have Insurance up to installation on site.
19. The University reserves the right to accept or reject any or all the quotations without assigning any reason.
20. Quoted price should be inclusive of essential accessories and delivery should be upto Tezpur University, Tezpur.
21. Irresponsive/incomplete quote will be rejected.
22. Applications for release of EMD should be submitted to the Registrar/ Assistant Registrar-GA, Tezpur University.
23. All communication relating to the NIQ may be made to Assistant Registrar-GA, Tezpur University.
24. Apart from the above terms and conditions the University has the right to include any other terms and conditions as and when felt necessary.

**INSTRUCTIONS TO BIDDERS FOR ONLINE BID SUBMISSION**

Instructions to the Bidders to submit the bids online through the Central Public Procurement Portal for e Procurement at <http://eprocure.gov.in/eprocure/app>

1. Possession of valid Digital Signature Certificate (DSC) and enrollment/registration of the agencies/bidders on the e-Procurement/e-tender portal is a prerequisite for e-tendering.
2. Bidder should do the enrollment in the e-Procurement site using the "Online Bidder Enrollment" option available on the home page. Portal enrollment is generally free of charge. During enrollment/registration, the bidders should provide the correct/true information including valid email id. All the correspondence shall be made directly with the agency/bidder through email id provided.

*Handwritten signature and date: 17/12/19*



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3. Bidder need to login to the site through their user ID/ password chosen during enrollment/registration.
4. Then the Digital Signature Certificate (Class II or Class III Certificates with signing key usage) issued by SIFY/TCS/nCode/eMudra or any Certifying Authority recognized by CCA,India on eToken/SmartCard, should be registered.
5. The DSC that is registered only should be used by the bidder and should ensure safety of the same.
6. Agency/Bidder may go through the tenders published on the site and download the required tender documents/schedules for the tenders he/she is interested.
7. After downloading / getting the tender document/schedules, the Bidder should go through them carefully and then submit the documents as asked, otherwise bid will be rejected.
8. If there are any clarifications, this may be obtained online through the tender site, or through the contact details. Bidder should take into account the corrigendum published before submitting the bids online.
9. Bidder then logs in to the site through the secured log in by giving the user id/ password chosen during enrolment/registration and then by giving the password of e-Token/Smartcard to access DSC.
10. Bidder selects the tender which he/she is interested in by using the search option & then moves it to the 'my tenders' folder.
11. From my tender folder, he selects the tender to view all the details indicated.
12. It is construed that the bidder has read all the terms and conditions before submitting their offer. Bidder should go through the tender schedules carefully and upload the documents as asked; otherwise, the bid will be rejected.
13. Bidder, in advance, should get ready the bid documents to be submitted as indicated in the tender documents/schedule and generally, they can be in PDF/xls/rar/jpg/dwf formats. If there is more than one document, they can be clubbed together and can be provided in the requested format. Bidders Bid documents may be scanned with 100 dpi with black and white option. It is advisable that each document to be uploaded through online for the tenders should be less than 2 MB. If any document is more than 2MB, it can be reduced through rar and the same can be uploaded, if permitted. However, if the file size is less than 1 MB the transaction uploading time will be very fast.
14. If there are any clarifications, this may be obtained through the site. Bidder should take into account the corrigendum published from time to time before submitting the online bids.
15. The Bidders can update well in advance, the documents such as certificates, annual report details etc., under My Space option and these can be selected as per tender requirements and then send along with bid documents during bid submission. This will facilitate the bid submission process faster by reducing upload time of bids.
16. Bidder should submit the Tender Fee/EMD as specified in the tender. The original should be posted/couriered/given in person to the Tender Inviting Authority, within the bid submission due date & time for the tender or as indicated in the tender. Scanned copy of the instrument should be uploaded as part of the offer.
17. While submitting the bids online, the bidder reads the terms & conditions and accepts the same to proceed further to submit the bid packets.
18. The bidder has to select the payment option as offline to pay the Tender Fee/EMD as applicable and enter details of the instruments.
19. The details of the DD/ any other accepted instrument, physically sent, should tally with the details available in the scanned copy and the data entered during bid submission time. Otherwise submitted bid will not be acceptable or liable for rejection.
20. The bidder has to digitally sign and upload the required bid documents one by one as indicated. Bidders to note that the very act of using DSC for downloading the bids and uploading their offers shall be deemed to be a confirmation they have read all sections and pages of the bid document including General conditions of contract without any exception and have understood the entire document and are clear about the requirements of the tender requirements.
21. The bidder has to upload the relevant files required as indicated in the cover content. In case of any irrelevant files, the bid will be rejected.
22. If the price bid format is provided in a spread sheet file like BoQ\_xxxx.xls, the rates offered should be entered in the allotted space only and uploaded after filling the relevant columns. The Price-bid BOQ template must not be modified/replaced by the bidder; else the bid submitted is liable to be rejected for this tender.

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23. The bidders are requested to submit the bids through online e-tendering system to the Tender Inviting Authority (TIA) well before the bid submission end date & time (as per Server System Clock). The TIA will not be held responsible for any sort of delay or the difficulties faced during the submission of bid online by the bidders at the eleventh hour.
24. After the bid submission (i.e. after Clicking "Freeze Bid Submission" in the portal), the acknowledgement number, given by the system should be printed by the bidder and kept as a record of evidence for online submission of bid for the particular tender and will also act as an entry pass to participate in the bid opening date.
25. The time settings fixed in the server side & displayed at the top of the tender site, will be valid for all actions of requesting, bid submission, bid opening etc., in the e-tender system. The bidders should follow this time during bid submission.
26. All the data being entered by the bidders would be encrypted using PKI encryption techniques to ensure the secrecy of the data. The data entered will not be viewable by unauthorized persons during bid submission & not be viewable by any one until the time of bid opening.
27. Any bid document that is uploaded to the server is subjected to symmetric encryption using a system generated symmetric key. Further this key is subjected to asymmetric encryption using buyers/bid openers' public keys. Overall, the uploaded tender documents become readable only after the tender opening by the authorized bid openers.
28. The confidentiality of the bids is maintained since the secured Socket Layer 128-bit encryption technology is used. Data storage encryption of sensitive fields is done.
29. The bidder should logout of the tendering system using the normal logout option available at the top right-hand corner and not by selecting the (X) exit option in the browser.
30. For any queries regarding e-tendering process, the bidders are requested to contact as provided in the tender document. Parallely for any further queries, the bidders are asked to contact over phone: 180030702232 or send a mail over to [cppp-nic@nic.in](mailto:cppp-nic@nic.in).



Assistant Registrar (GA)  
Tezpur University

**Technical Specifications cum Compliance Report**  
**(To be submitted on Company's/Firm's Letterhead Signed and Sealed)**

Item	Specification	Complied (Yes/No)	Remarks if any,
Mock Layout of Car wiring	Phase : Single Phase Voltage : 220-240 V AC Frequency : 50 Hz <b>Features :</b> <ul style="list-style-type: none"> <li>• Front Lighting Panel</li> <li>• Dash Board Panel</li> <li>• Ignition System</li> <li>• Rear Lighting Panel</li> </ul>		
Ignition System of an Automobile	Phase : Single Phase Voltage : 220-240 V AC Frequency : 50 Hz <b>Features:</b> <ul style="list-style-type: none"> <li>• Hassle free operation</li> <li>• Sturdy construction</li> <li>• Excellent performance</li> </ul>		
Fuel System of Petrol Engine (Actual Working Model)	Material : MS Fuel Type : Petrol Type : Petrol MPFI Type Fuel Supply System <b>Features :</b> <ul style="list-style-type: none"> <li>• Fuel Tank</li> <li>• Fuel Filter</li> <li>• Motorized Fuel Pump</li> <li>• Pressure Gauge</li> <li>• Fuel Rail</li> <li>• Fuel Injectors</li> <li>• ECU</li> <li>• Igniter &amp; Ignition Coil</li> <li>• Distributor</li> <li>• Spark Plugs</li> <li>• Power Supply</li> <li>• Fuel Gauge &amp; Control Panel</li> </ul>		
Lubrication System of an Automobile	Speed : 1500 rpm Usage : Lubricant oil Pressure : High Pressure <b>Features:</b> <ul style="list-style-type: none"> <li>• High efficiency</li> <li>• Trouble-free operation</li> </ul> Low maintenance cost		
Air Brake Actual Working	Material : Cast Iron Type : Air Brake Actual Frame Shape : Horizontal		
3/ 4 Cylinder Petrol Engine Test Rig <sup>#</sup>	<b>Specification:</b> <b>Type of Engine :</b> Four Stroke engine, vertical water cooled, Self-start, Petrol, additional option for manual cranking, <b>new engine</b> Displacement : Minimum 800 CC or above Power : Minimum or above 37 BHP @ 5000 RPM Torque : Minimum and above 59 Nm @ 2500 RPM Type of load : Rope Brake Dynamometer/Electric generator with load bank.		

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	<p>Fuel Measuring System : Fuel Measuring system consists of a fuel tank, a burette and a three way cock arrangement.</p> <p><b>Air intake measurement &amp; heat carried away by exhaust gas:</b> Consisting of an air tank mounted on an iron stand fitted with a suitable orifice plate, manometer, J/K type thermocouple with display units for measuring the exhaust gas temperature with pocket connection with instruments suitably mounted on a panel board.</p> <p><b>Exhaust gas calorimeter:</b> An exhaust gas calorimeter, made of Stainless steel for calculating heat carried away by exhaust gases with appropriate temperatures measurement. The body of the calorimeter is insulated with ceramic wool and cladded by aluminum foil.</p> <p><b>Roatometer:</b> Range 40 – 400 Lph for calorimeter and <b>engine jacket</b> water flow measurement</p> <p>Digital Temperature indicator with Temperature sensors at appropriate positions like coolant temperatures measurement, exhaust gas temperatures, cooling water temperature in calorimeter etc. Temperature Measurement with digital temperature Indicator with multi-channel switch.</p> <p>Temperature Sensor : Thermocouple J-Type</p> <p><b>Tachometer:</b> In built crank sensor to measure RPM.</p> <p>The whole setup is well designed and supported by a good quality painted rigid M.S Structure.</p>		
<p>Multi Cylinder Diesel Engine Test Rig##</p>	<p><b>Specifications:</b></p> <p><b>Engine:</b></p> <p>Four Stroke engine, vertical water cooled, Self-start, additional option for manual cranking diesel engine (Kirloskar or equivalent <b>new Engine</b>)</p> <p>Displacement : Minimum 1400 CC, 4 cylinders</p> <p>Minimum Power : 48.3 BHP @ 5000 RPM</p> <p>Min. Torque (Nm@rpm) : 85 @ 2500 RPM, Load cell minimum 0-40 kg with digital indicator</p> <p>Compression ratio : Minimum 18:1</p> <p><b>Type of load :</b> Rope Brake Dynamometer/Electric generator with load bank.</p> <p><b>Fuel System:</b> Capacity 10-15 Ltrs, fuel measuring system consists of a fuel tank, a burette and a three way cock arrangement.</p> <p><b>Air intake measurement &amp; heat carried away by exhaust gas</b></p> <p>Consisting of an air tank mounted on an iron stand fitted with a suitable orifice plate, manometer, Thermocouple for measuring the exhaust gas temperature with pocket connection with instruments suitably mounted on a panel board.</p> <p><b>Exhaust gas calorimeter:</b> An exhaust gas calorimeter, made of Stainless steel will be provided for calculating hate carried away by exhaust gases. The body of the calorimeter is insulated with ceramic wool and cladded by aluminum foil.</p> <p><b>Roatometer: Range</b> 40 – 400 Lph for calorimeter and <b>engine jacket</b> water.</p> <p>Digital Temperature indicator with Temperature sensors at appropriate positions like coolant temperatures measurement, exhaust gas temperatures, cooling water temperature in calorimeter, water jacket etc.</p> <p>Temperature Measurement: Digital Temperature Indicator with multi-channel switch.</p>		

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	<p>Temperature Sensor : J/K-Type Thermocouple  Tachometer : In built crank sensor to measure RPM.  The whole setup is well designed and supported by a good quality painted rigid M.S Structure.</p>		
<p>Computerized Variable Compression Ratio Multi Fuel (Petrol/ Diesel) Engine##</p>	<p><b>Specification:</b>  <b>Engine:</b>  Compression ratio: 5:1 to 20:1  No of cylinder : single  Fuel : Petrol / Diesel  Cooling : Water  Speed: 1400 – 1500 rpm  H.P : 3 to 5  Starting : Manual  <b>Dynamometer :</b>  Type : Eddy Current / Electric Motor  Cooling : Air  Load Measurement Method : Strain Gauge  Max. Speed : 3000 rev/m  HP : 5 hp  Coupling Type : Direct  <b>Exhaust Gas Calorimeter :</b>  Type : Shell And Tube  No. of measuring point in test rig : 6  outer Insulation : Asbestos cloth  Thermocouple Type : “K”  Water flow control Valve : Gate vavle  <b>Calorimeter :</b>  Type : Shell and Tube  Material of construction : All wetted parts in SS  <b>Air Box :</b>  Type : Square 500 mm x 500 mm  Materials of construction : Mild steel  <b>Air flow :</b>  Type : Differential pressure sensor is to be used to measure the pressure difference between the orifice plates.  Range : 0 – 99 m<sup>3</sup>/hr  Signal Conditioning: Standalone for each sensor.  <b>Fuel Flow :</b>  Range : 0 – 9.9 kg/ h  Signal Conditioning: Standalone for each sensor.  <b>Engine Speed:</b>  Type: A non-contact PNP sensor is to be used to measure the engine RPM.  Range : 0 – 6000 RPM  Signal Conditioning: Standalone frequency to voltage converter.  Water Flow :  Type : Acrylic Body Rotameter  Range : 40-400 LPH for Engine Cooling  Range : 10-100 LPH for Calorimeter Cooling.  <b>Torque at Dynamometer :</b>  Range : 0-50 kg  Signal Conditioning/Transmitter: Standalone  <b>Cylinder Pressure Sensor:</b>  Pressure Range : 0-100 Bar  Type : Piezoelectric  Cooling Air Cool  Calibration at 20°C :</p>		

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	<p>Sensitivity(<math>\pm 0.5\%</math>) : 25mV/bar  Frequency Range: 0.016-20,000Hz  Operating Temperature Range: -50-300°C  Sensitivity Shift : <math>\leq \pm 2.5\%</math>  Output Impedance : 100<math>\Omega</math>  Mounting Torque of the sensor in adopter : 15Nm</p> <p><b>Crank Angle Encoder :</b>  Pulse Count (PPR) : 360  Operating Volt : 5 V DC (<math>\pm 0.5\%</math>)  No Load Supply Current : Max 7 mA  Output Type : Pulse  Operating Current : Max. per channel 20 mA, conditionally  Output Frequency : Max. 200kHz  Rise Time : 100 ns  Connector : type 9416, 12 pin, type 9416L, 12 pin  Protection Degree : DIN EN 60529, IP65  Operating Temp : -20.....60°C  Storage Temp : lens - 40 ..... 70°C</p> <p><b>Data Acquisition Card Technical Specification:</b></p> <ul style="list-style-type: none"> <li>• 14 Analog Inputs(12-16 Bits depending on speed)</li> <li>• DE9-Pro adds 24-b-bits low speed ADC for 20-Bits Effective Resolution</li> <li>• 0-5 Volt Maximum Analog Input Range</li> <li>• 2 Analog Output (12-Bits, 0-5 Volts)</li> <li>• 23 Digital I/O</li> <li>• Up to 2 counters (32-bits each)</li> <li>• Support Software or Hardware Timed acquisition.</li> <li>• Maximum Input Stream rate of 50+ kHz</li> <li>• Capable of Command/Response time as low as 1.2 milliseconds</li> <li>• Built-In-Screw Terminals for some Signals.</li> <li>• USB2.0/1.1 Full Speed Interface</li> <li>• Ethernet 10Base-T Interface</li> <li>• Dual-Processor Design with 168 MHz for total processing power</li> <li>• Electrical Insulation possible with Ethernet Interface</li> </ul> <p>Interfacing: With appropriate Window based interfacing software, Compatible Desktop/ Laptop</p>		
<p>Compressor test rig (Manual )</p>	<p>Compressor: Single Stage, Capacity minimum 4 CFM  Working Pressure: Minimum 5 kg/cm<sup>2</sup>  Air Tank: With safety valve and Control Valve.  Drive : 1 HP motor, Crompton make or equivalent  Manifold Tank : Minimum 100 liter capacity  Flow Measurement : Differential Pressure Transmitter with Orifice meter / Orifice meter  Temp. Measurement : J type thermocouple/ Temperature Transmitter- 2Nos.  Pressure Measurement : By Pressure Transmitter/ Pressure gauge  RPM Measurement : By Proximity Sensor  Energy meter : Electronic type, for power measurement  Standard make On-off switch, mains indicator etc  An ENGLISH instruction manual consisting of experimental procedures, block diagram etc. The whole set-up is well designed and arranged on a rigid structure painted with industrial PU Paint.</p>		

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