



Directorate of Research
Navsari Agricultural University, Navsari-396450, Gujarat

Tender Document

for

Purchase of Scientific Instruments/Equipments

Under NAHEP-CAAST

TENDER No. NAU/DR/CAAST-02/2018-19

Section 1: List of instruments/machines/equipments

No.	Name of the Instrument	Qty	Objective of purchase
1	Bomb calorimeter	01	<ul style="list-style-type: none"> Must be suitable for measure the calorific value of food material etc. The Digital Bomb Calorimeter must be simple and inexpensive for determination of heat of combustion of organic matter to determine calorific value.
2	Protein analyzer	01	<ul style="list-style-type: none"> Must be suitable for measure the protein content of food material (Liquid as well as solid).
3	Gas analyzer	01	<ul style="list-style-type: none"> Must be suitable for measure the oxygen and Carbon dioxide content of food material (Liquid as well as solid) with in packaging material.
4	Soxhlet apparatus	01	<ul style="list-style-type: none"> Must be suitable for extraction and measurement of the oil content with in the food samples
5	Wood grinder (Fine grinding machine/ Hammer Mill)	04	<ul style="list-style-type: none"> Machine should provide wood chips into fine powder form for particle board or fibre board making
6	Pulping machine	02	<ul style="list-style-type: none"> Machine utilize for extraction of pulp from wild pulpy fruits
7	Essential oil extraction machine	01	<ul style="list-style-type: none"> Demonstration of UG/PG students regarding extraction of essential oil from leaves, flowers & roots, grasses

Note: Detail specifications with special terms and conditions of all above listed 8 items are described in Section 2.

Section 2: TECHNICAL SPECIFICATION COMPLIANCE DOCUMENT (TSCD)

The tenderer has to fill the technical specification compliance document (TSCD) only for those instrument/ equipment for which they have quoted. In the format of technical specification compliance document (TSCD), tenderer should **mention model number of instrument or machine** and should have to make comments regarding any deviation or any equivalent technology or any information which supplement the claim of complying the technical specification or any noticeable information *etc.* After filling the above document, tenderer has to duly authenticate by signing on each page and seal them properly.

TSCD-1: Bomb Calorimeter

Particular	Specifications	Comply (Yes/No)	Remarks
Measuring Range	500-10000 K.cal/Kg		
Repeatability of tests	± 1 cal/gm		
Temperature Resolution	0.001 °C		
Temperature Indicator	Microprocessor based Digital Temperature Indicator with Built-in Timer with Computer Interface & Software		
Test per hour	3-6 tests/hour		
Calorimeter vessel	The vessel is made up of copper and is chromium plated.		
Bomb firing	Automatic (mostly Preferred) or Button Press		
Water jacket	The outer container of Jacket is made up of copper and is chromium plated both inside and outside or S.S. The top is closed by a Bakelite cover. A terminal block is fitted on the top of the container so that connections can be made from the firing control.		
Offset stirrer	The stirring mechanism supplied gives sufficient turbulence for effective stirring, While no heat is imparted to the calorimeter water. It consists of an impeller driven by a stirrer at a constant speed. The offset arrangement whereby the motor drives the impeller via belt precludes any possibility of heat transfer between motor and calorimeter Vessel contents.		
Outer jacket	Outer jacket will be provided with insulation.		
Electronic firing unit with digital thermometer printer	The unit must be incorporated with Digital Beckmann Thermometer for the precise measurement of the Rise in temperature and an electronic circuit that provides an electrical means for firing the samples. This unit must also have a printer that prints the temp. readings are being recorded by the printer continuously so the operator is totally free do any other job thus saving operators time and the human errors involved with recording the readings are also eliminated. Socket for stirrer terminals for fuse wire must also be provided at the back side of the unit.		
Pressure resistance	Must with stand pressure of 300 atmospheres (4400psi) for a period of ten minutes without any sign of leakage.		
Oxygen filling	Automatic		

Particular	Specifications	Comply (Yes/No)	Remarks
Crucible	Various types of crucible are available but the standard supplied with the outfit beings a stainless steel crucible of 8 ml capacity which fits in the standard support ring provided with the outfit		
Calculations	Automatic with report and graphs. There is built in thermal printer for direct report print out.		
	Internal Data Logger with computer interface, PC Software for Data records		
Data storage	With facility to store the recorded data.		
Power supply	220 V AC		
Accessories	Must be supplied with all accessories required for running the Bomb calorimeter like gas cylinder etc		
Other	Must have performance certificates from the reputed government institutes		
	Bidder should supply spare parts or AMC for minimum of 10 years if needed. AMC should be after warranty period.		
	Demonstration of the bomb calorimeter shall be on bidder part		

TSCD-2: Protein Analyzer

Particular	Specifications	Comply (Yes/No)	Remarks
Principle of working	Combustion		
Sample size	Sample Volume- up to 1 mL or 1 g		
Applications	Foods, feed, beverage, edible oils		
Sample Types	Liquid, solid and semi-solid		
Sensitivity	> 99.5 % accuracy		
Measuring range	0.001 to 99.99 %		
Equipment features	Analyser must be used directly for protein estimation, Must be remarkably easy to use and must have more repeatable than Kjeldahl& other combustion techniques. Equipment must be Table Top as well as easily portable.		
Test Timing	Test should be measured in less than 5 min		
Calculations	Automatic		
Data storage	With facility to store the recorded data.		
Power supply	220 V AC		
Accessories	Must be supplied with all accessories required for running the protein analyser		
Other	Must have performance certificates from the reputed government institutes		
	Bidder should supply spare parts or AMC for minimum of 10 years if needed. AMC if required should be after warranty period.		
	Demonstration of the equipment shall be on bidder part		

TSCD-3: Gas Analyzer

Particular	Specifications	Comply (Yes/No)	Remarks
Sample size	Analyzer must measure the gas composition within packaging materials of variable sizes		
Applications	Fresh fruits and vegetables packed in packaging material or processed food inside tin container		
Sensitivity	> 99.5 % accuracy		
Measuring range	0.001 to 20.0%		
Equipment features	Analyser must be used directly for measurement of the gases. Equipment must be Table Top as well as easily portable. Equipment must be easy to calibrate.		
Test Timing	Test should be measured in less than 5 min		
Calculations	Automatic Reading of the gas composition must be recorded		
Data storage	With facility to store the recorded data.		
Power supply	220V AC		
Accessories	Must be supplied with all accessories required for running the gas analyser. Must also include five extra gas purging needles along with gas pipe		
Other	Must have performance certificates from the reputed government institutes		
	Bidder should supply spare parts or AMC for minimum of 10 years if needed. AMC should be after warranty period.		
	Demonstration of the equipment shall be on bidder part		

TSCD-4: Soxhlet Apparatus

Particular	Specifications	Comply (Yes/No)	Remarks
Capacity	Extractor Capacity must be 500 ml and Extracting Flask capacity must be of 2000 ml		
No of Samples / unit time	Six sample simultaneously		
Extraction Time / Test Timing	6-8 hours		
Applications:	Oil seeds, Fruit peel, dehydrated powder etc.		
Sensitivity:	> 99.5 % accuracy		
Leakage of solvent	Nil		
Equipment features	Soxhlet must be Table Top. Equipment must be easy to maintain. The body of the heating mantle must be of Stainless Steel to avoid rusting when in contact with water. Condenser must condense all the vapours of solvent and oil immediately. Extracting flask must fit easily on the heating mantle. Bottom of the extracting flask must be flat.		
Temperature	Temperature setting of heating mantle must be in the range of 50-160°C.		
Temperature indicator	Must be digital to depict temperature in °C.		
Temperature control	Automatic		
Power supply	220 V AC		
Accessories	Must be supplied with all accessories required for running		

Particular	Specifications	Comply (Yes/No)	Remarks
	the apparatus.		
Other	Bidder should supply spare parts for minimum of 5 years if needed. Heating mantle should have warranty period of one year.		
	Demonstration of the equipment shall be on bidder part		

TSCD-5: Wood grinder (Fine grinding machine/ Hammer Mill) (4 Nos.)

Particular	Specifications	Comply (Yes/No)	Remarks
Body made of	Mild steel		
Foundation stand	Fixed foundation stand size 35" × 13"		
Feeding inlet size	16" × 15"		
Machine height	36" × 13"		
Motor	5 HP motor (ISI) / Three phase		
Blower	Must be include		
Cyclone	Must be include		
Warranty	1 year compulsory		
Note: Additional warranty may be quoted with extra amount			

TSCD-6: Pulping machine (2 Nos.)

Particular	Specifications	Comply (Yes/No)	Remarks
Capacity:	5 kg to 25 kg		
Voltage:	320 V to 380 V		
Power(W):	1.5 kw		
Machine material:	Stainless Steel made		
Capacity:	0.12 t/h		
Rotate Speed:	1200 r/min		
Structure:	single and double channels		
Raw Materials	Fresh Fruits and flower petals		
Warranty	1 year compulsory		
Note: Additional warranty may be quoted with extra amount			

TSCD-7: Essential oil extraction machine

Particular	Specifications	Comply (Yes/No)	Remarks
Distillation unit Loading Capacity	20 kg (120 Litter) to 50 kg (300 Litter)		
Distillation Still	In Stainless Steel (304)		
Condenser Tubes & Ends	In Stainless Steel (304)		
Water Boiler	In MS		
Inter Connecting Pipelines	In GI		
Safety Valves	Can be Standard Made		
Ball Valves			
Glass/Oil Separator	Must be include		
Raw material can be use	Fresh Grasses, leaves, bark, wood, roots , rhizomes as well as flowers and spices		
Warranty	1 year compulsory		
Accessories to be supplied	Quantity		
Distillation Still	1 No		

Condenser Tubes & Ends	1 No		
Water Boiler	1 No		
Inter Connecting Pipelines	1 Set		
Safety Valves	1 Set		
Ball Valves			
Glass Separator	1 No		
Note: Additional warranty may be quoted with extra amount			

Section 3: General Terms and Conditions of Purchase

1. The bids are invited by tender through paper advertisement and details are available at NAU website **www.nau.in** (tender division).
2. All the tender documents should be sent through Indian Postal Service or courier to **“Principal Investigator and Nodal officer CAAST, Directorate of Research, University Bhavan, NAU, Navsari”**. Envelope should be marked as **“TENDER No. NAU/DR/CAAST-02/2018-19”**. The tender received after prescribed date will not be considered.
3. Period for Tender/Bid Document downloading is 02-03-2019 and last date for receipt of tender documents to the office is 16/03/2019 up to 17:00 hrs and the bid validity period is Upto 31st March, 2019
4. The price shall be including the GST/VAT/other taxes if any, and transportation charges sent to The Principal Investigator and Nodal officer CAAST, Directorate of Research, University Bhavan, NAU, Navsari, Navsari – 396 450 (Gujarat).
5. Prices must be filling up in downloaded tender form only.
6. The tenderer has to submit non-refundable **Tender Fee of Rs. 1500/-** per instrument/item and **2% Refundable Earnest Money Deposit (EMD)** against quoted price, in the form of Bank Draft payable at Navsari in favor of **“Planning Officer, Directorate of Research, University Bhavan, NAU, Navsari”** depending upon the number of Item/s quoted. EMD of unsuccessful tenderer will be refunded, while EMD of successful tenderer will also be refunded after completion of purchase procedure. Tender document without tender fees and EMD will not be counted.
7. Successful tenderer has to submit **5%** of purchase order value as a Security Deposit and they will be informed at the time of purchase order.
8. The bidder must have a GST number and PAN number. The proof of evidence to be presented. Otherwise their offer will not be accepted.
9. For queries regarding item specifications, contact respective scientist preferably, during office hours as given below.

Sr. No.	Details of instruments	Name of the unit & Contact No.
1	Instruments listed from Sr. No. 1 to 4	Unit-1: PHT, 9913753252
2	Instruments listed from Sr. No. 5 to 7	Unit-2: CoF, 9408851432

10. **Provide declaration certificate that** “My/ Our firm has not been banned/debarred/black listed by GoG/GoI” along with tender document.
11. Attach certificates/ documents such as GST/VAT, PAN Card, Bank details, other related documents like Tender fee exemption certificates, if any. All these documents should duly signed and sealed and should submitted along with tender document.
12. In case of Original Equipment Manufacturer (OEM), attach the OEM certificate. Authorized dealers can quote their rates provided that they need to attach relevant certificate of authorized dealership issued by OEM recently.
13. The lowest price is not the criteria and emphasis would be placed on quality and specifications of the material. The NAU has right to reject any or all the offers and invite fresh quotations, if need arises. The NAU further reserves the right of selecting the brand and accepting or otherwise any of the conditions stipulated by tenderer.
14. The legal field will limited to Navsari only.
15. The order shall be delivered in maximum of 15-20 days from the date of order as per approved price.
16. The tenders will be canceled if the above 1 to 15 conditions are not adhered/fulfilled.

Signature of the sender, stamp and address

Forwarding Letter

From: _____

No.
Date: - - 2019

To,

The Principal Investigator
and Nodal officer CAAST
O/o Directorate of Research
University Bhavan
Navsari Agricultural University
Eru Char Rasta, Navsari – 396 450 (Gujarat)

Subject: Submission of tender for the purchase of Scientific Instruments/Equipments
[TENDER No. NAU/DR/CAAST-02/2018-19]

Sir,

I/We hereby submit the offer (duly filled) in response to the advertisement/tender notice **TENDER No. NAU/DR/CAAST-02/2018-19** for **Scientific Instruments/Equipments** in accordance with the terms and conditions of such supply and declare as under:

I/We hereby offer to supply to Navsari Agricultural University, Navsari in accordance with the terms and conditions, hereto annexed and at the prices given by me/us in commercial section of online tendering.

I/We enclose herewith **Tender Fee and EMD from any nationalized bank payable at Navsari, Gujarat drawn in favor of “Planning Officer, Directorate of Research, University Bhavan, NAU, Navsari”** payable at Navsari, Gujarat with following details.

	Amount (Rs.)	Amount in Words	DD No.	DD issue Date
Tender Fee (Calculated)		Rs.		
EMD (Calculated)		Rs.		
Item No_____				

Note: If tenderer has quoted for more than one item, add the rows below the table.

I/We carefully read and understood and agree to abide by the said terms and conditions set in the tender document hereto annexed and the description/ specifications of the items.

I/We agree to hold this **offer open till 31st March, 2019** from the date of due date of opening of the tender.

I/We agree that in case of dispute, if any, the decision of The Procurement Committee of CAAST, Navsari Agricultural University, Navsari 396 450 shall be final and binding upon me/us.

Stamp & Sign of the Tenderer

Date: ____/____/____

Tender Form Format

To,

The Principal Investigator and Nodal officer CAAST,
Directorate of Research, University Bhavan,
Navsari Agricultural University,
Eru Char Rasta, Navsari – 396 450 (Gujarat)

Sub: Submission of Tender Form for the purchase of Scientific Instruments/Equipments..... Reg.

[TENDER No. NAU/DR/CAAST-02/2018-19]

Sir,

In response to the advertisement/tender notice **TENDER No. NAU/DR/CAAST-02/2018-19**, I/We hereby submit/Quote our **best price** (duly filled) for following **Scientific Instruments/Equipments** and we are ready to accept all the terms and conditions mentioned in the tender documents:

Item No.	Name of Instruments/Items	Quantity	Rate per Item	Total Amount
1	TSCD-1: Bomb Calorimeter As per specification mentioned in the section 2	01		
2	TSCD-2: Protein analyzer As per specification mentioned in the section 2	01		
3	TSCD-3: Gas analyzer As per specification mentioned in the section 2	01		
4	TSCD-4: Soxhlet apparatus As per specification mentioned in the section 2	01		
5	TSCD-5: Wood grinder (Fine grinding machine/ Hammer Mill) As per specification mentioned in the section 2	04		
6	TSCD-6: Pulping machine As per specification mentioned in the section 2	02		
7	TSCD-7: Essential oil extraction machine As per specification mentioned in the section 2	01		
	Note: Mention GST/VAT/ any other taxes or other relevant information pertaining to quoted prices			

Stamp & Sign of the Tenderer

Tenderer's Detail

1.	Name of the Company	:	
3.	Registered Office Address with Telephone/Mobile Number Fax Number e-mail	:	
4.	Correspondence Address with Telephone/Mobile Number Fax Number e-mail	:	
5.	Details of the authorized person (Name, designation, address) with Telephone/Mobile Number Fax Number e-mail	:	
8.	PAN Card No.	:	
7.	GST No.	:	
8.	Bank detail (Bank Name, Branch Address, Account No., Type of Account (Current/ Savings), MICR No, IFSC Code	:	

Stamp & Sign of the Tenderer