

**DEMOCRATIC SOCIALIST REPUBLIC OF
SRI LANKA**



**UVA WELLASSA UNIVERSITY
AHEAD PROJECT**

**SUPPLY, DELIVERY, INSTALLATION, DEMONSTRATION AND
COMMISSIONING OF
LABORATORY EQUIPMENT FOR THE DEPARTMENT OF
BIOSYSTEMS TECHNOLOGY
FACULTY OF TECHNOLOGICAL STUDIES**

REF NO UWU/AHEAD/RA1/R3/FTS/GOODS/NCB/LE/04

BIDDING DOCUMENT

Bid Opening On	11/01/2021 – 2.30 p.m.
Bid Validity up to	120 days from 11/01/2021

Uva Wellassa University
Passara Road,
Badulla,
Sri Lanka

Deputy Director Procurement
Uva Wellassa University

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**INVITATION FOR BIDS
UVA WELLASSA UNIVERSITY
AHEAD PROJECT**



**SUPPLY, DELIVERY, INSTALLATION, DEMONSTRATION AND COMMISSIONING OF
LABORATORY EQUIPMENT FOR THE DEPARTMENT OF BIOSYSTEMS TECHNOLOGY
FACULTY OF TECHNOLOGICAL STUDIES
UWU/AHEAD/RA1/R3/FTS/GOODS/NCB/LE/04**

The Chairman, Department Procurement Committee, on behalf of the AHEAD project Uva Wellassa University, invites sealed bids from eligible bidders and qualified bidders for **Supply, Delivery, Installation, Demonstration & Commissioning of Laboratory Equipment for the Department of Biosystems Technology, Faculty of Technological Studies.**

1. Bidding will be conducted through the National Competitive Bidding (NCB) procedure.
2. Bidder should have at least three years' experience in the relevant field in Sri Lanka.
3. Interested eligible bidders may obtain further information from the Deputy Director Procurement (AHEAD/OTS), Uva Wellassa University, Passara Road, Badulla, (Tel. No 055-2226622 Ext- 1124, Fax No 055-2226633), and inspect the bidding documents at the project office of the University **between 9.00 am to 3.00 pm from 21st December 2020 to 11th January 2021 and until 12.00p.m.**
4. A complete set of bidding documents in English may be purchased by interested bidders on submission of a written application to the Deputy Director Procurement (AHEAD/OTS), Uva Wellassa University, Passara Road, Badulla and upon payment of a non-refundable fee of Rupees **3,500.00** in cash at the AHEAD/OTS Office of the University. The bidder can also download the bidding documents from the University website <http://www.uwu.ac.lk/procurement>. Those who are obtaining bidding documents from the University website should submit the complete documents along with a Bank Draft drawn in favor of the "Vice Chancellor, Uva Wellassa University" for **Rs.3,500.00** as non-refundable fee or the payments could be made to any branch of Bank of Ceylon, to the AHEAD Project, Uva Wellassa University, Account No 82592579, and the original of the cash receipt/deposit slip to be attached with the bidding documents. The documents may be purchased **until 12.00 p.m. on 11th January 2021**. The pre bidding meeting has been scheduled to be held on **23rd December 2020 at 1.00 p.m. at the Board Room of the University.**
5. Bids must be delivered to be addressing **Chairman, Department Procurement Committee, Uva Wellassa University, Passara Road, Badulla**, on or before **02.30 p.m. on 11th January 2021**. Please indicate the **"SUPPLY, DELIVERY, INSTALLATION, DEMONSTRATION & COMMISSIONING OF LABORATORY EQUIPMENT FOR THE DEPARTMENT OF BIOSYSTEMS TECHNOLOGY, FACULTY OF TECHNOLOGICAL STUDIES – UWU/AHEAD/RA1/R3/FTS/GOODS/NCB/LE/04"** on the top left hand corner of the envelope.
6. All bids must be accompanied by a Bid Security addressed to the **Vice Chancellor, Uva Wellassa University**, valid for 120 days from the date of the bid opening. The Value of the Bid Security shall be **Rs.380,000.00**
7. The bids shall be deposited in the 'Tender Box' available in the Registrar's Office of the University, or sent under Registered Cover to be received before the deadline to the address given in Clause No.5.
8. Late bids will be rejected. Bids will be opened immediately after the closing of bids, in the presence of the bidders or their authorized representatives who choose to attend the bid opening at the board room of the Uva Wellassa University.

Chairman,
Department Procurement Committee,
Uva Wellassa University, Passara Road, Badulla
Tel/ Fax No 055-2226475, 055-2226633
20/12/2020

Section I.

Instructions to Bidders (ITB)

This Bidding Document is based on the standard bidding document for National Competitive Bidding (NPA/Goods/SBD 01). Section I will not be provided with this bidding document. Bidders are instructed to refer the Section I of the standard bidding document (NPA/Goods/SBD 01). The document is available at the website of NPA, www.npa.gov.lk

Section VI.

Conditions of Contract

This Bidding Document is based on the standard bidding document for National Competitive Bidding (NPA/Goods/SBD 01). Section VI will not be provided with this bidding document. Bidders are instructed to refer the Section VI of the standard bidding document (NPA/Goods/SBD 01). The document is available at the website of NPA, www.npa.gov.lk

Section VIII. Contract Forms

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Contract Agreement

THIS CONTRACT AGREEMENT is made

the [insert number] day of [insert month], [insert year].

BETWEEN

(1) [Insert complete name of Purchaser], a [insert description of type of legal entity, for example, an agency of the Ministry of or corporation and having its principal place of business at [insert address of Purchaser] (hereinafter called “the Purchaser”), and

(2) [Insert name of Supplier], a corporation incorporated under the laws of [insert country of Supplier] and having its principal place of business at [insert address of Supplier] (hereinafter called “the Supplier”).

WHEREAS the Purchaser invited bids for certain Goods and ancillary services, viz., [insert brief description of Goods and Services] and has accepted a Bid by the Supplier for the supply of those Goods and Services in the sum of [insert Contract Price in words and figures, expressed in the Contract currency (ies)] (hereinafter called “the Contract Price”).

NOW THIS AGREEMENT WITNESSETH AS FOLLOWS

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the Conditions of Contract referred to.

2. The following documents shall constitute the Contract between the Purchaser and the Supplier, and each shall be read and construed as an integral part of the Contract

(a) This Contract Agreement

(b) Contract Data

(c) Conditions of Contract

(d) Technical Requirements (including Schedule of Requirements and Technical Specifications)

(e) The Supplier’s Bid and original Price Schedules

(f) The Purchaser’s Notification of Award

(g) [Add here any other document(s)]

3. This Contract shall prevail over all other Contract documents. In the event of any discrepancy or inconsistency within the Contract documents, then the documents shall prevail in the order listed above.

4. In consideration of the payments to be made by the Purchaser to the Supplier as hereinafter mentioned, the Supplier hereby covenants with the Purchaser to provide the Goods and Services and to remedy defects therein in conformity in all respects with the provisions of the Contract.

5. The Purchaser hereby covenants to pay the Supplier in consideration of the provision of the Goods and Services and the remedying of defects therein, the Contract Price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract.

IN WITNESS whereof the parties hereto have caused this Agreement to be executed in accordance with the laws of Democratic Socialist Republic of Sri Lanka on the day, month and year indicated above.

For and on behalf of the Purchaser

Signed [insert signature]

in the capacity of [insert title or other appropriate designation]

in the presence of [insert identification of official witness]

For and on behalf of the Supplier

Signed [insert signature of authorized representative(s) of the Supplier]

in the capacity of [insert title or other appropriate designation]

in the presence of [insert identification of official witness]

Performance Security

[The issuing agency, as requested by the successful Bidder, shall fill in this form in accordance with the instructions indicated] ----- [Issuing Agency's Name, and Address of Issuing Branch or Office] --
----- * Beneficiary ----- [Name and Address of Employer] -----

Date -----

PERFORMANCE GUARANTEE No. -----

We have been informed that ----- [Name of Supplier] (hereinafter called "the Supplier") has entered into Contract No. ----- [Reference number of the contract] dated ----- with you, for the -----
--- Supply of ----- [name of contract and brief description] (hereinafter called "the Contract").

Furthermore, we understand that, according to the conditions of the Contract, a performance guarantee is required. At the request of the Supplier, we ----- [name of Agency] hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of -----
[Amount in figures] (-----) [amount in words], such sum being payable in the types and proportions of currencies in which the Contract Price is payable, upon receipt by us of your first demand in writing accompanied by a written statement stating that the Contractor is in breach of its obligation(s) under the Contract, without your needing to prove or to show grounds for your demand or the sum specified therein. This guarantee shall expire, no later than the day of, 20.. [Insert date, 28 days beyond the scheduled completion date including the warranty period] and any demand for payment under it must be received by us at this office on or before that date.

[Signature(s)]

Section II.

Bidding Data Sheet (BDS)

The following specific data for the goods to be procured shall complement, supplement, or amend the provisions in the Instructions to Bidders (ITB). Whenever there is a conflict, the provisions herein shall prevail over those in ITB.

[Instructions for completing the Bid Data Sheet are provided, as needed, in the relevant ITB Clauses.]

ITB Clause Reference	A. General
ITB 1.1	The Purchaser is Uva Wellassa University, AHEAD Project
ITB 1.1	The name and identification number of the Contract are Supply, Delivery, Installation, Demonstration & Commissioning of Laboratory Equipment for the Department of Biosystems Technology, Faculty of Technological Studies. Contract No UWU/AHEAD/RA1/R3/FTS/GOODS/NCB/LE/04
ITB 1.2	The bidder should have at least three years' experience in the relevant industry in Sri Lanka and should submit documents to prove experience in the industry.
ITB 2.1	The source of funding is GOSL
ITB 4.4	Foreign bidders are allowed to participate in bidding Not allowed
	B. Contents of Bidding Documents
ITB 7.1	For Clarification of bid purposes only, the Purchaser's address is Attention Deputy Director Procurement (AHEAD/OTS) Address Uva Wellassa University, Passara Road, Badulla. Telephone 055-2226622 Ext-1124 Electronic mail ahead@uwu.ac.lk
	C. Preparation of Bids
ITB 11.1 (e)	The Bidder shall submit the following additional documents A complete company profile of the bidders including, but not limited to, the following <ul style="list-style-type: none"> • Business Registration Certificate • VAT Registration Certificate • List of client who use the Products • Past 3 years relevant experience in the relevant Industry in Sri Lanka • Manufacturer's Authorization. • Certificate of Registration under Public Contract Act.
ITB 15.1	The bidder shall quote the local expenditure in Sri Lankan Rupees.
ITB 18.1 (b)	After sales service is Required
ITB 19.1	The bid shall be valid for 120 days from 11/1/2021
ITB 20.1	Bid shall include a Bid Security in any of following ways <ul style="list-style-type: none"> (a) A Bank guarantee issued by a reputed bank operated in Sri Lanka. (b) Cash deposit at the Shroff Counter of the University (c) Cash deposit from any branch of Bank of Ceylon, to the AHEAD Project, Uva Wellassa University, Account No 82592579, and the cash receipt/deposit slip to be attached with the bidding documents.
ITB 20.2	The amount of the Bid Security shall be Rs. 380,000.00 Beneficiary Vice Chancellor, Uva Wellassa University.

	The validity period of the bid security shall be 150 days from the closing date of the Bid
	D. Submission and Opening of Bids
ITB 22.2 (c)	The inner and outer envelopes shall bear the following identification marks SUPPLY, DELIVERY, INSTALLATION, DEMONSTRATION & COMMISSIONING OF LABORATORY EQUIPMENT FOR THE DEPARTMENT OF BIOSYSTEMS TECHNOLOGY, FACULTY OF TECHNOLOGICAL STUDIES Contract No UWU/AHEAD/RA1/R3/FTS/GOODS/NCB/LE/04
ITB 23.1	For bid submission purposes, the Purchaser's address is Attention Deputy Director Procurement (AHEAD/OTS) Address Uva Wellassa University, Passara Road, Badulla. The deadline for the submission of bids is Date 11/1/2021 Time 2.30 p.m.
ITB 26.1	The bid opening shall take place at Address Board Room, Uva Wellassa University, Passara Road, Badulla. Date 11/1/2021 Time 2.30 p.m.
	E. Evaluation and Comparison of Bids
ITB 34.1	Domestic preference shall not be a bid evaluation factor.
ITB 35.3(d)	The adjustments shall be determined using the following criteria, from amongst those set out in Section III, Evaluation and Qualification Criteria (a) Deviation in Delivery schedule Option 2 is selected and the adjustment is 0.05% per week or part thereof (b) Deviation in payment schedule Not applicable (c) The cost of major replacement components, mandatory spare parts, and service Applicable
ITB 35.4	The following factors and methodology will be used for evaluation Not applicable
ITB 35.5	Bidders shall be allowed to quote for one or more lots. [refer to Section III Evaluation and Qualification Criteria] Purchaser will evaluate the bid item by item basis.

Section III.

Evaluation and Qualification Criteria

1. Evaluation Criteria (ITB 35.3 (d))

The Purchaser's evaluation of a bid may take into account, in addition to the Bid Price quoted in accordance with ITB Clause 14, one or more of the following factors as specified in ITB Sub-Clause 35.3(d) and in BDS referring to ITB 35.3(d), using the following criteria and methodologies.

(a) Delivery schedule

Option 2

The goods covered under this invitation are required to be delivered within an acceptable range of weeks specified in the Schedule of Requirement. No credit will be given to earlier deliveries, and bids offering delivery beyond this range will be treated as nonresponsive. Within this acceptable range, an adjustment per week, as specified in the Bid Data Sheet, will be added for evaluation purposes only, to the bid price of bids offering deliveries later than the earliest delivery period specified in the Section V, Schedule of Requirements

(a) Deviation in payment schedule. **Not applicable**

(c) Cost of major replacement components, mandatory spare parts, and service

The required spare parts for the goods covered under this invitation shall be available for at least five years of period and after sales service (Free service & Pay service).

(d) Specific additional criteria **None**

2. Evaluation Criteria (ITB 35.4)

Not Applicable

3. Multiple Contracts (ITB 35.5)

The Purchaser shall award multiple contracts to the Bidder that offers the lowest evaluated combination of bids (one contract per bid) and meets the post-qualification criteria (this Section III, Sub-Section ITB 37.2 Post-Qualification Requirements)

The Purchaser shall

- (a) Evaluate only lots or contracts that include items per lot and quantity per item
- (b) Take into account The lowest-evaluated bid for each lot

3. Post qualification Requirements (ITB 37.2)

After determining the lowest-evaluated bid in accordance with ITB Sub-Clause 36.1, the Purchaser shall carry out the post qualification of the Bidder in accordance with ITB Clause 37, using only the requirements specified. Requirements not included in the text below shall not be used in the evaluation of the Bidder's qualifications.

Qualification Criteria

- (a) Bid may be submitted by any reputed supplier of **Laboratory Equipment** , registered business in Sri Lanka or any accredited local agent who takes fullest responsibility for the whole bid. The local agent shall submit evidence of status, obligations, power of attorney and any other documentary evidence that he is duly authorized and eligible to bid on behalf of the manufacturer.
- (b) The bidders should also have previous experience of at least three years in relevant industry in the supply and also technical and financial capability necessary to perform the contract.
- (c) Bids will be rejected as non- responsive if documentary evidence in proof of above has not been provided.
- (d) If an Agent submits bids on behalf of more than one supplier, unless each such bid is accompanied by a separate Bid Form for each bid, and a bid security when required for each bid, and authorization from the respective Manufacturer, and valid vendor certificate, all such bids will be rejected as non-responsive.
- (e) Bidders should possess the Certificate of Business Registration issued by a Governmental Authority/ Registrar of Companies/ Provincial Registrar of Business in the relevant category.
- (f) Bidders shall register the Contract under Public Contract Act and submit the certificate of registration (ITB 11.1(e)).
- (g) Bidders offering goods under their own brand names should provide along with their bids a current certification/s of quality; Bid not complying with this requirement may be treated as non - responsive.
- (h) Having a service center in Badulla or Uva Province will be considered as an added qualification.

4. Domestic Preference (ITB 34.1) – **Applicable to Ministry of Finance, Public Finance Circular No.03/2020**

Section IV. Bidding Forms

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FORM OF BID
UVA WELLASSA UNIVERSITY
UWU/AHEAD/RA1/R3/FTS/GOODS/NCB/LE/04

To Chairman
Procurement Committee
Uva Wellassa University
Passara road,
Badulla

We, the undersigned, declare that

Having examined the Instructions to Bidders and Conditions of Tender, Conditions of Contract, Schedule of Requirements, Schedule of Particulars and Bills of Quantities, I / We the undersigned, offer to **Supply, Delivery, Installation, Demonstration & Commissioning of Laboratory Equipment for the Department of Biosystems Technology, Faculty of Technological Studies, Contract No UWU/AHEAD/RA1/R3/FTS/GOODS/NCB/LE/04** said Price Schedule amounting to Rupees
.....and cents.....(Rs) only

I / We undertake to **Supply, Delivery, Installation, Demonstration & Commissioning of Laboratory Equipment for the Department of Biosystems Technology, Faculty of Technological Studies** within the time stated in the tender documents, if our tender is accepted.

I / We agree to abide by this tender for period of 120 calendar days from the date fixed for receiving of Bids or any extended period and it shall remain binding upon us and may be accepted at any time before the expiration of that period.

Unless and until a formal Agreement is prepared and executed, this Tender, together with your written acceptance thereof, shall constitute a binding Contract between us.

I / We understand that, you are not bound to accept the lowest or any tender, you may receive.

This day of20..... in the capacity of..... duly authorized to sign Bids for and on behalf (indicate whether the Freehold Owner or Power of Attorney Holder) of (Blanks to be filled in BLOCK CAPITALS)

Signature.....

Duly authorized for signed on behalf of
(Name of the Bidder)

Address.....

.....

Date.....

Price Schedule
Supply, Delivery, Installation, Demonstration & Commissioning of Laboratory Equipment for the
Department of Biosystems Technology
Faculty of Technological Studies
Contract No: UWU/AHEAD/RA1/R3/FTS/GOODS/NCB/LE/04

No	Items	QTY	Brand / Model	Unit Price (excluding VAT)	Total Price (excluding VAT)	VAT 8%	Total Price including VAT
1	Shake incubator	1					
2	Rotary evaporator apparatus	3					
3	Vortex mixture	1					
4	Moisture analyzer	1					
5	Autoclave	1					
6	Laminar floor	2					
7	Hot air oven with separators	2					
8	Distilled water plant	1					
9	Homogenizer	1					
10	pH meters (with Conductivity, Ion, ORP and Dissolved Oxygen Benchtop Meters)	5					
11	Digital balance	3					
12	Deep Freezer	1					
13	Hot plate (Heating Mantle) with magnetic stir	4					
14	Hot plate (Heating Mantle) with magnetic stir	4					
15	Hot plate (Heating Mantle) with magnetic stir	2					
16	Ultra Sonicaters - Probe	1					
17	Ultra Sonicaters - bath	1					

18	Thermo flasks	5					
19	UV Vis Spectrophotometer	1					
20	Pycnometer	1					
21	Pycnometer	1					
22	Specific Gravity Hydrometer	2					
23	laboratory constant temperature Incubator	1					
24	Table mounted Moisture analyzer	1					
25	Digital Refractometer	2					
26	Portable PH meter	5					
27	IR Thermometer (-33° C to +500° C)	3					
28	Food Grade Thermocouple	3					
29	Plastic desiccators	5					
30	Vaccum desiccators	3					
31	Colorimeter	10					
32	Titratable acidity measuring burettes	25					
33	Burette holders	25					
34	Glass Beaker, 250ml	25					
35	Glass Pipette Graduated, 25ml	10					
36	Glass Pipette Graduated, 10ml	10					
37	Pipette fillers (universal model)	10					
38	White tiles (Acid proof)	10					
39	Measuring cylinders 500 ml	25					
40	13 A sunk boxes	25					

41	Glass Funnel, 90mm	25					
42	Bioreactor – 2L	01					
43	Bioreactor – 5L	01					
44	Small auto clave vessal – 200ml	01					
45	Small auto clave vessal – 500ml	01					
46	Carbon, Hydrogen, Nitrogen, Sulphur, Oxygen (CHNSO) Analyser	01					
47	Simultaneous Thermogravimetry – Differential Scanning Calorimetry (STA/TG-DSC)	01					
47.2	Automatic sample changer (TG-DSC)	01					
	Total						

Total Price with VAT (in Words)

.....

Maintenance charges (as a percentage) after the warranty period (If any)

Vat Registration No

Signature.....

Duly authorized for signed on behalf of

(Name of the Bidder)

Address.....

.....

Date.....

FORM OF BID SECURITY

[insert issuing agency's name, and address of issuing branch or office]

Beneficiary Vice Chancellor, Uva Wellassa University, Passara road, Badulla

Date ----- *[insert (by issuing agency) date]*

BID GUARANTEE No. ----- *[insert (by issuing agency) number]*

We have been informed that ----- *[name of the Bidder]* (hereinafter called "the Bidder") has submitted to you its bid dated ----- *[date]* (hereinafter called "the Bid") for the execution of
..... *[insert name of Contract]* under Contract No. -----

Furthermore, we understand that, according to your conditions, Bids must be supported by a Bid Guarantee.

At the request of the Bidder, we ----- *[insert name of issuing agency]* hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of ----- *[insert amount in figures]* -----
----- *[insert amount in words]* upon receipt by us of your first demand in writing accompanied by a written statement stating that the bidder is in breach of its obligation(s) under the bid conditions, because the bidder

- (a) has withdrawn its bid during the period of bid validity specified; or
- (b) does not accept the correction of errors in accordance with the Instructions to Bidders (hereinafter "the ITB") ; or
- (c) having been notified of the acceptance of its bid by the Employer during the period of bid validity, (i) fails or refuses to execute the Contract Form, if required, or (ii) fails or refuses to furnish the Performance Security, in accordance with the ITB.

This Guarantee shall expire (a) if the Bidder is the successful bidder, upon our receipt of copies of the Contract signed by the Bidder and of the Performance Security issued to you by the Bidder; or (b) if the Bidder is not the successful bidder, upon the earlier of (i) the successful bidder furnishing the performance security, otherwise it will remain in force up to ----- *(insert date)*

Consequently, any demand for payment under this Guarantee must be received by us at the office on or before that date.

.....
[Signature of authorized representative(s)]

MANUFACTURER'S AUTHORIZATION

[The Bidder shall require the Manufacturer to fill in this Form in accordance with the instructions indicated. This letter of authorization should be on the letterhead of the Manufacturer and should be signed by a person with the proper authority to sign documents that are binding on the Manufacturer. The Bidder shall include it in its bid, if so indicated in the BDS.]

Date [insert date (as day, month and year) of Bid Submission]

No. [insert number of bidding process]

To [insert complete name of Purchaser]

WHEREAS

We [insert complete name of Manufacturer], who are official manufacturers of [insert type of goods manufactured], having factories at [insert full address of Manufacturer's factories], do hereby authorize [insert complete name of Bidder] to submit a bid the purpose of which is to provide the following Goods, manufactured by us [insert name and or brief description of the Goods], and to subsequently negotiate and sign the Contract.

We hereby extend our full guarantee and warranty in accordance with Clause 27 of the Conditions of Contract, with respect to the Goods offered by the above firm.

Signed [insert signature(s) of authorized representative(s) of the Manufacturer]

Name [insert complete name(s) of authorized representative(s) of the Manufacturer]

Title [insert title]

Duly authorized to sign this Authorization on behalf of [insert complete name of Bidder]

Dated on _____ day of _____, _____ [insert date of signing]

Section V

Schedule of Requirements

1. List of Goods and Delivery Schedule

[The Purchaser shall fill in this table, with the exception of the column “Bidder’s offered Delivery date” to be filled by the Bidder]

No	Description of Goods	Qty	Final Destination as specified in BDS	Delivery Date 1		
				Earliest Delivery Date	Latest Delivery Date	Bidder’s offered Delivery date
1	As Listed in the Price Schedule		Department of Biosystems Technology, Uva Wellassa University	Within 4 Weeks of the Order	Within 10 Weeks of the Order	

* Destination of delivery - Department of Biosystems Technology,
Uva Wellassa University,
Passara Road,
Badulla.

2. Technical Specifications

The bidder shall follow the following technical requirement and other requirement

General Conditions

For equipment, Bidders should provide following details:

Country of origin catalogues, Mother company registration letter, possible date of supply, Mother company warranty period, After sales and service facility, Service agreement cost and free service period, Approximate value for main spare parts, Installation & operational manual/s, installation and demonstration should provide free of charge if this product is purchased, Local agent should have necessary tools to carry out complete service and repair.

Technical Specifications
Supply, Delivery, Installation, Demonstration and Commissioning of Laboratory Equipment
for
Department of Biosystems Technology

Item No.	Item	Component Description	Minimum Specifications	Bidder's Response (Yes/No)	If "No" comment/s on the offer
1	Shake incubator	Use	ORBITAL Shaking and incubation of variety of containers, flaks, tubes..etc.		
		Capacity	9 x 250 mL, 6 x 500 mL, 4 x 1,000mL or closest		
		Temperature range	RT to 60°C or closest with temperature increment of 0.5°C or smallest		
		Heating/cooling speed	5°C/min or better		
		Temperature uniformity	+/- 0.5°C or better		
		Speed range	30 to 400 rpm or closest with speed increment of 1 rpm with Soft start and smooth acceleration		
		Orbit	16 to 18 mm or closest		
		Timer	up to 9999 mins under fixed value control mode or better		
		Platform	Non-slip surface for shaking of variety of containers, Interchangeable flask clamps to suit different flask sizes		
		Electrical Requirements	230 V, 50 Hz		
		Material	Stainless Steel (SS304 or Better) Interior/Exterior or higher corrosion resist material		
		Warranty	Two years comprehensive warranty or better		
		Additional/optional features	Touchpad controls of speed and temperature with LED/LCD display		

			Predrilled standard tray (SS316) should be included, with clamps		
2	Rotary evaporator apparatus	Main Machine	Manual Lift / Vertical condenser		
		Rotating Speed	20-180 rpm/20-280 rpm (optional) Motor Power 60w or higher		
		Temperature Range	Up to 100 °C		
		Heating Bath	750w SS304 or better, corrosion resistant		
		Material Glasswares	Heat stable Glass, borosilicate (pyrex similar)		
		Material other parts	Stainless Steel (SS304 or Better SS) or chemical resist durable polymer		
		Dimensions (mm)	Aproximate 560L×320W×660H		
		Accessories	Variable vaccum pump noise free / maintain free , All Galsswares (including 3 round bottom flasks in different sizes per each units 100 ml,250 ml,500 ml)		
		Electrical Requirements	230 V, 50 Hz		
		Warranty	Two years comprehensive warranty or better		
3	Vortex mixture	Speed Range	0 - 2,850 rpm		
		Timer range	1min to 99 hours for better		
			usage General mixing of microplates, Circular orbiting orbit size 2-3 mm		
			Full set with cup head and 96 well microplate holders		
		Operating Modes	Manual (inbuild Touch LCD)		
		Ambient Operating Range	+4° to 65°C		
		Power supply	230V~, 50 Hz		
		Warranty	Two years comprehensive warranty or better		
4	Moisture analyzer / balance	Measuring method	Infrared heat drying mass measurement		
		Sample pan size (mm)	130 mm or close		
		Range of moisture content	0.01 % to 100.00 %		

		Measurement mode	Automatic or Timed halting modes, Rapid, Slow and Step drying modes, Predictive Measuring mode		
		Drying heater	Mid-wave infrared quartz heater		
		Moisture content minimum display	0.01%		
		Maximum sample capacity	120 g		
		Dimensions	W220 x D415 x H190 (mm) or close		
		Setting temperature range	30 °C to 200 °C (by 1 °C increments)		
		Accessories	Sample pan 2 pcs, sample pan stop, windbreak case, sample pan, handler 2 pcs, aluminum sheet 20 pcs, spoon, spatula or more accessories		
		Power requirements	~230 V 50 Hz		
		Warranty	Two years comprehensive warranty or better		
5	Autoclave	Capacity	35- 50 L		
		Sterilization Temperature	134°C		
		Sterilization Pressure	0.22 Mpa or better		
		Timer Range	0-99 min or better		
		Heat average	~ ±0.1 C		
		Chamber materials	SS304 or better		
		Display Type	Digital touch is prefer, with presure and temperature readings and adjust		
		Other features	Stainless steel with two stainless steel sterilizing baskets,		
			User friendly and automatic shutdown with beep sound as sterilization completes		
			Digital display with touch keypad, Auto discharge of cool air and steam		
		Accessories	Sterilization box 10, tray / SS		
		Power supply	230V~, 50 Hz		
		Warranty	Two years comprehensive warranty or better		

6	Laminar floor	Usage	working spaces for 3 person 6 ft or higher length		
		Door	Tempered glasses or safer materials (Automatic control more preferred)		
		Airflow Speed	Control Speed Controller (Three Step Speed Controller) Auto		
		Cabinet	Stainless Steel SS 304 (SS 316 to contact surfaces) or better solutions		
		Blower	High efficient centrifugal type with lifetime lubricated bearings		
		Work Table	304 Stainless Steel (optional 316 grade)		
		Light	High intensity, low wattage >800 lux		
		Standard Accessories	Air/gas cock and mains power socket (16A) 3 or		
		Other Accessories	Microprocessor LCD Controller - Digital display for air flow rate - Cabinets and drawers at the bottom - Gauges Pressure (Statics Pressure Mano-Mater) - Magnahelic Gauge (for filter pressure) - U. V. Germicidal Tube in work area - Electronic Filter choke alarm		
		Power supply	230V~, 50 Hz		
7	Hot air oven with separators	Warranty	Two years comprehensive warranty or better		
		Capacity (L)	Around 100		
		Temp.Range	RT to ~400°C or close		
		Temp. Precision	0.1 °C or better		
		Temp. Fluctuation	0.5 °C or better		
		Timing Range	1~9999min		
		Shelves No	4 pcs or higher		
		Door	Tempered glass or safty transparent method		
		Materials	SS 304 or better corrosion resist (316SS preferred)		

		Display	Touch LCD to control, set temperature, on time inside temperature, time		
		Application	Hot air sterilizer is used to sterilize small surgical instrument, glass, petri dishes etc		
			Adjustable sterilization time.		
			Over-temperature alarm.		
			Top air outlet with adjustable air volume.		
			Heating up fast,forced-airconvection, fast sterilization.		
			High precision microprocessor temperature control;		
			Fan inside, fully sealed inside, no air circulation with external air, temperature rise fast.		
		Power supply	230V~, 50 Hz		
		Warranty	Two years comprehensive warranty or better		
8	Distilled water plant	Capacity	4L/ hr or higher		
			Cabinet structure with glass aparators stock tank ~ 5L or better		
		Water type	Regular water		
		Water consumption	1:10		
		Material Glasswares	Heat stable Glass, borosilicate (pyrex similar)		
		Watwer tank	sensor to automatic control of water level and auto resatart with level decrease		
		other features			
			silica sheathed heater		
			all contact point with water shold be borosilicate glass		
			safety cut off for overheat when there is water supply issue		
			automatic cut off of water with power down and auto start with power resume		

		Power supply	230V~, 50 Hz		
		Warranty	Two years comprehensive warranty or better		
9	Homogenizer	Material	Stainless steel SS304 or better SS or durable polymer		
		Range of Speed	300-30,000 rpm		
		Speed Display	Yes		
		Capacity (H2O)	5L (or above)		
			Include a stand SS 304 or better		
		Power supply	230V~, 50 Hz		
		Warranty	Two years comprehensive warranty or better		
10	pH meters (with Conductivity, ORP and Dissolved Oxygen Benchtop Meters)	Digital pH Range	0.00 to 14.00 units or better		
		Usage	pH, Conductivity, ORP and Dissolved Oxygen and other features are preferred		
		Iron selective electrode (Option)			
		Probe	pH probes with ISFET technology is highly preferred than glass probes		
		Temperature Range	32.0 to 212 °F (0 to 100 °C)		
		pH Resolution	0.01 units		
		Temperature Resolution	0.2 °F (0.1 °C)		
		pH Accuracy	~0.1 or better		
		Temperature Accuracy	±0.6 °F (±0.3 °C)		
		ATC Probe	Thermistor, 10k ω at 25 °C		
		pH Calibration Temperature	32.0 to 140.0 °F (0.0 to 60 °C)		
		Battery Life	200 hours or greater (low battery indicator)		
		Size	0.9x7.4x1.8 inch (23x188x46mm)		
		Weight	3.7oz (105g)		
		Warranty	Two years comprehensive warranty or better		
		Accessories	Standard solutions for all measurement is compulsory		
11	Digital balance	Weighing Capacity	0-500 g or higher range		

		Display Type	Digital		
		Balance Type	Electronic		
		Accuracy	0.001-1%		
		Operating Temperature	5°C-35°C		
		Pan Size (mm)	Approx 80 x 3.1		
		Warranty	Two years comprehensive warranty or better		
12	Deep Freezer	Temperature	-40°C -RT		
		Capacity	Aprox. 550 L or close		
		Dimensions (mm)	Approx 650 x 580 x 900		
		Design configuration	Vertical		
		Outer cabinet	SS 304 or better / corrosion free Polymer coated AL		
		Inner chamber	Stainless steel		
		Door	solid door made of SS 304 or better / corrosion free Polymer		
		Handle	With door lock arrangement		
		Sensor	Pt100 RTD sensor		
		Shelves	3, 4, 5 Made of SS wire mesh		
			Steel storage racks • Three (03) Stainless steel/aluminum racks fitting with the chambers (one for each freezer chambers) that can hold 12-15 standard size cryoboxes Polymer Cryoboxes • Thirty (30) cryoboxes each hold 25 (or higher) for storage of 1.0 to 2.0ml internally and externally threaded cryogenic vials with lid. Grid numbers on the box-lid for easy identification of sample vials		
		Alarm	Audiovisual alarm for high / low set points		
		Warranty	Two years comprehensive warranty or better		
13	Hot plate (Heating Mantle) with magnetic stir	Stirrer Speed	60-1500 RPM		
		Stirring Capacity	250 mL		

		Temperature Range	RT-380°C		
		Temperature uniformity on the plate	±3°C		
		Dimensions mm (W x D x H)	approx. 225x215x115		
		Diameter of working plate mm	(Approx) 140x180		
		Working surface material	Aluminum alloy		
		Power Consumption	aprox. 500W		
		Fault indication	Outputs sound signal and turns off the heating		
		Warranty	Two years comprehensive warranty or better		
14	Hot plate (Heating Mantle) with magnetic stir	Stirrer Speed	60-1500 RPM		
		Stirring Capacity	500 mL		
		Temperature Range	RT-380°C		
		Temperature uniformity on the plate	±3°C		
		Dimensions mm (W x D x H)	(approx.) 380x320x70		
		Diameter of working plate mm	(Approx) 320x320		
		Working surface material	Aluminum alloy		
		Power Consumption	aprox. 500W or better		
		Fault indication	Outputs sound signal and turns off the heating		
		Warranty	Two years comprehensive warranty or better		
15	Hot plate (Heating Mantle) with magnetic stir	Stirrer Speed	60-1500 RPM		
		Stirring Capacity	1-2 L		
		Temperature Range	RT-380°C		
		Temperature uniformity on the plate	±3°C		

		Dimensions mm (W x D x H)	(approx.)490x320x70 lower		
		Diameter of working plate mm	(Approx) 400x300 respectively		
		Working surface material	Aluminum alloy		
		Power Consumption	aprox. 500W or better		
		Fault indication	Outputs sound signal and turns off the heating		
		Warranty	Two years comprehensive warranty or better		
16	Ultra Sonicaters - Probe	Power Rating	Aprox. 700 watts		
		Frequency	High frequency operation, >50 KHz, and more frequency operations		
		Programmability	10 memories plus sequencing		
		Programmable Timer	Aprox. 72 hour		
		Adjustable Pulse On/Off	1 second to 24 hours		
		Other features	Generator Converter, 1/2" (13mm) diameter probe, Power cable, Converter cable, Wrench set		
		Power	220-240 V AC, 50-60 Hz		
		Dimensions	mm (W x L x H) (approx)240*140*100 - Different sizes of probes		
			Power adjustable amplitude control (40% - 100%)		
			Backlight LCD display		
			Digital timer,		
			Optional heating up to 60 deg.C, Auto alarm function, Memory function		
		Warranty	Two years comprehensive warranty or better		
17	Ultra Sonicaters - bath	Usage	dispersion of solid in to solutions / cleaning of test tubes, optical lenses and various instruments		
		Frequency	20-200 kHz variable or higher frequency range		
		Programmability	10 memories plus sequencing		
		Programmable Timer	~24 hour		

			1 second to 24 hours		
		Tank capacity	~3L Material SS304 or better		
			Heating facility should be available with Temperature up to 60°C		
			Power adjustable amplitude control (40% - 100%)		
			Backlight LCD display		
			Auto alarm function, Memory function		
		Warranty	Two years comprehensive warranty or better		
18	Thermo flasks	Type	Vacuum		
		Capacity	1 L or more		
			100% Stainless Steel 304 SS or better corrosion free.		
			Simple cylindrical appearance - Powder coating with light colors - colors should not high intense		
			Store hot or cold beverages for long hours		
		Warranty	one year comprehensive warranty or better		
19	UV Vis Spectrophotometer	Optical System mandatory option	Both transmittance and reflectance of Solid and Liquid samples		
		Light source	Halogen lamp, Deuterium lamp or better		
		Wavelength range	165 to 3300 nm or close ~ +/- 0.1 or better		
		Photometric accuracy	+/-0.0015 Abs (0 to 0.5 Abs) or better		
		Monochromator	grating-grating type or better option		
		Scanning speed	up to ~3000 nm/min (from ~1nm minimum) / and Quick survey scanning		
		Detector	nGaAS /PMT and PbS detectors or better to detect all range		
		Photometric range	-4~4 Abs or better range		
		Other Special features	Nitrogen gas purging for both the optical and the sample compartment is required		

		Accessories	Necessary accessories and Sample Holders for Absolute Reflectance measurements Absorption measurements Solid samples (medium size) measurements Liquid sample measurements Powder samples measurements Micro Sample Holder Inert gas Purge Box and flow control 1 cm × 1 cm liquid sample valves (50 Plastic/ 4 Quartz), Micro drop sample holders 50.		
		Display	LCD color touch screen (can be used to control without PC)		
		Standard programs	Abs/%T meter, Quantitative analysis, Spectrum measurement, Time course measurement, Fixed wavelength measurement, Validation, Two wavelength time course measurement		
		Special Software	For Color Calculation, Film Thickness, Solar Radiation, and ultra-violet protection Factor Calculation Measures: Bitterness, Color, Polyphenols, and Diacetyl Content or similar Software UV-Vis Water Analysis		
		PC	Suitable higher performance PC or Tablet to control the machine		
		UPS	30 min or better backup		
		Warranty	Two years comprehensive warranty or better		
20	Pycnometer	Material	Borosilicate glass 3.3		
		measuring range of thermometer	10- 35° C		
		calibrate at 20° C			

		capacities	10 ml With stopper cap"		
		lateral capillarytube with glass cap on ground joint			
		minimal thermal expansion good chemical resistance			
		high resistance to thermal shocks			
		DIN 12809 certifications or similar			
		Warranty	2years		
21	Pycnometer	Material	Borosilicate glass 3.3		
		measuring range of thermometer 10- 35° C			
		calibrate at 20° C			
		capacities	25 ml With stopper cap"		
		lateral capillarytube with glass cap on ground joint			
		minimal thermal expansion good chemical resistance			
		DIN 12809 certifications or similar			
		high resistance to thermal shocks			
		Warranty	2years		
22	Specific Gravity Hydrometer	Material	Boro Silicate		
		sub divions	0.001 g /cm3		
		reference temperature	20 °C		

		paper scale, shot weighted			
		medium surface tension	1000-1500 g/cm ³		
		Certification	DIN 12791 or similar		
		length	with thermomter 29 cm		
		thermometer range (0 to 35° C)			
		Warranty	2 years or more		
23	laboratory constant temperature Incubator	Material	Stainless steel inner Container, foursquare semicircle transition		
		Capacity	230 L approximate		
		Temperature control	RT +5 -80 °C		
		Temperature fluctuation	± 0.5 °C		
		time range	1- 9999 minutes temperature resolution- 0.1 ° C		
		consumption	700 W , power suuply 220 v ± 10 % , 50/60 hz/ Auto restart with power failures		
		Internal size	60* 50*75 cm		
		exterior size	73*67* 122 cm		
		removable shelf for conveninet cleaning			
		Independent temperature safety device, which auto breaks off when over temperature limits to ensure experiment run safely			

		Door with wide hollow tempered glass observation window, adjustable air-tight buckle lock and silicon rubber seal			
		Warranty	2 years or more		
24	Table mounted Moisture analyzer	Readability	0.001 g or 0.01 %		
		Reproducibility	0.002 g / 0.05 %		
		Pan volume	90 g or close		
		weighing units	weighing, % moisture, % solids, % moisture on dry basis, % solids on dry basis		
		establishment time	4 seconds		
		internal memory	up to 99 test results or 49 programmable user settings		
		calibration	Automatic		
		Heating source	400 W halogen heaters, 50- 160 °C		
		Drying Programs	standard programs, 1 step, or upto 3 temperature setting ramps		
		Display	large, backlight display with 24 mm size digits		
		49 internal storage spaces for automatic storage of complete drying process			
		Automatic test run after closing of the lid			
		Warranty	3 years		

25	Digital Refractometer	measuring range	0 to 85 % Brix, 0 - 80 °C		
		resolution -	0.1 % brix, 0.1° C		
		Accuracy	± 0.2 % brix, ± 0.3 °C		
		Battery type-	1*9 V battery		
		Dimensions	192*102*67 mm		
		Temperature	automatic from 10 to 40° C		
		water proof protection			
		Dual level LCD for sugar content in % brix and temperature			
		Easy calibration with distilled or deionized water			
		Stainless steel sample well			
		warranty	1 year		
26	Portable PH meter	FET technology for Probe is preferred			
		single device should contain probe and the machine (Not separate probes connections)			
		Preferred to have conductivity measurements or any other options			
		PH Range	0.00 to 14.00		
		PH resolution	0.01		
		pH Accuracy	± 0.02		

		automatic buffer recognition	4.00,7.00,9.22, 10.00 (with manual override)		
		pH calibration	user selectable 1 or 2 point		
		mV range	±19999 mV		
		mV resolution	1 mV		
		mV Accuracy	±1 mV		
		Temperature range	(-10 to 105 °C)		
		Temperature resolution	0.1 °C		
		Temperature accuracy	±0.5° C		
		ATC/manual range	0-100° C		
		Connector	BNC		
		Digital display with back-light brightness			
		power	Li-ion batteries rechargeble with adaptor		
		Battery Life	500 hours typical		
		Size	(L*W*D)175*75*35 mm		
		warranty	2 year or more		
27	IR Thermometer (-33° C to +500° C)	for touchless measurements of the surface temperature			
		with laser visor			
		measurement duration	1 second		

		measurement range	(-) 33° C to (+) 500° C or higher		
		Dysplay	digital / Background illumination		
		Accuracy	2 % from measuremnt value or $\pm 2^{\circ}\text{C}$		
		switchable °c to °F			
		ratio measurement distance/ spot size	11:1		
		power	Li-ion batteries rechargeble with adaptor		
		Battery Life	500 hours typical		
		display of curret temperature, highest temperature			
		warranty	2 years or more		
28	Food Grade Thermocouple	Temperature Range -	50 ° Cto +150° C		
		resolution	0.1 °C		
		accuracy	$\pm 0.4^{\circ}\text{C}$		
		Battery	3 *1.5 V AAA batteries		
		Dimensions	152* 58*30 mm		
		Kit includes	meter, penetration probe (HI 765 PWL), Batteries		
		water proof thin casing			
		quick response			

		Stainless steel penetration probe with 1 m cable			
		CAL Check feature at start up to check the calibration status			
		Hold Function to freeze readings on the LCD			
		warranty	1 year or more		
29	Plastic desiccators	Material	Thick perforated polypropylene disk with a big hole in the centre for ease in lifting		
		Flange	340 mm (o.d)		
		Internal diameter	300 mm		
		polymeric material on the flanges to make it air tight			
		separator to keep water absorbant material			
		warranty	1 year or more		
30	Vaccum desiccators	Material	Polypropylene/ polycarbonate		
		Transparent polycarbonate bottom			
		I.d	300 mm		
		Flange	340 mm (o.d)		
		Capacity	Hold 740 mm Hg for 24 hours without greasing		
		Internal groove on the flange to hold silcon rubber O-ring			

		Polyprpylene stopcock fitted with Lubricating PTEF plug			
		PTEF plug works in 3 ways	vaccum creation, shutting off, vacuum releasing		
		warranty	1 year		
31	Colorimeter (portable)	Application	analysis of food or other liquid samples for their color		
		accuracy:	$\pm 0.5\%$ at 4% transmittance, ± 0.005 at 0.3 AU		
		resolution:	0.001 AU		
		Power:	Rechargeable Preferred (life time for more than 2days)		
		Size:	Portable		
		operating temperature:	0-40 °C, 85 % R.H		
		Sample tubes:	1cm*1 cm		
		operating wave lengths:	450,500,550,575,600,650 nm or more options		
		choices	100+ test		
		warranty:	2 years or more comprehensive		
32	Titratable acidity measuring burettes	Material	Boro silicate glass 3.3		
		capacity	100 ml		

		Capacity	100mL		
		Divisions	0.20mL		
		O.D./Height	17/830mm		
		Stopcock	0.20mm durable polymer		
		Well legible numbers and shortline graduation			
		high resistance to thermal shocks			
		in compliance with DIN EN ISO385 / according to ASTM E 287-02 standard)or similar			
33	Burette holders	stand and parts	Corrosion proof polymer / powder coat (epoxy) aluminum or SS304		
		with clamp and stand			
		Holder Material	stainless steel and Rubber roller grip		
34	Glass Beaker, 250ml	Material	Boro silicate glass 3.3		
		Capacity	250ml		
		Height	Aprox. 90mm		
		Outer Dimension	Aprox. 68mm		
		Graduation Range	0-1750ml / 200-25ml		
		Graduation Interval	25ml		

		Accuracy	±5%		
		Autoclavable	Yes		
		Upper Extreme Temp	490°C (914°F)		
		Upper Working Temp	230°C (446°F)		
		Lower Working Temp	-230°C (-382°F)		
		Max. Thermal Shock	160°C (320°F)		
35	Glass Pipette Graduated, 25ml	Material	Borosilicate glass		
		Capacity	25ml		
		Tolerance	+/-0.10mL		
		Graduations	0.1ml		
		O.D. / Height	13mm / 455mm		
36	Glass Pipette Graduated, 10ml	Material	Borosilicate glass		
		Capacity	10ml		
		Tolerance	+/-0.03ml		
		Graduations	0.1ml		
		O.D. / Height	10mm / 370mm		
37	Pipette fillers (universal model)	Material	Plastic / durable chemical resist polymer		
		Suitable for filling and dispensing from all standard pipettes			

		Capacity 25 ml			
		free continuous and accurate full delivery according to DIN and german weights and measures regulation.			
		Delivery time is not influenced by piston pressure or similar effects.			
		Resistant to dry sterilization up to 160 or steam sterilization up to 3 bar			
		Color	different colors		
38	White tiles (Acid proof)	Material	Porcelain		
		Size	12cm* 12 cm		
		Color	white		
		Unglazed, highly resistance to acid & alkalies			
		Water Absorption	<0.1		
		Thickness	7mm		
39	Measuring cylinders 500 ml	Capacity	500mL / 17oz.		
		Material	Polypropylene PP		
		Transparency	Translucent		
		Graduation Range	10 - 500mL		
		Graduation Interval	10mL		
		Autoclavable	Yes		

		Melting Point	338°F (170°C)		
		Upper Extreme Temp	275°F (135°C)		
		Lower Working Temp	32°F (0°C)		
40	13 A sunk boxes	Material	PVC		
		13 A sunk boxes with white color twin sockets			
41	Glass Funnel, 90mm	Material	Borosilicate Glass		
		Diameter	3.5" (90mm)		
		StemHeight	3.5"		
		Stem diameter	0.31" (8mm)		
42	Bioreactor – 2L	Type of culture	Microbial		
		Mode of Operation	Continuous		
		Culture vessel	Autoclavable, single walled with round bottom		
		Control Tower	2L		
		Footprint bench surface (W+H+D):	200 x 495 x 300 mm		
		Power supply	100 to 240 VAC 50/60Hz, 8 A		
		Operating Temperature	0 °C – 60 °C or close		
		Motor drive	Maintenance free, Quiet direct drive 150 W, 1100 rpm		

		Integrated Pumps:	"Quantity 3, Controller Fixed speed (regulated on/off) Speed 43 rpm Pump head Watson Marlow 114, Fast Load pump head"		
		Probes and Controllers:	"Temperature, separate sensor Temperature control 0 – 40°C Display resolution 0.1°C Temperature integrated in pH probe Temperature control 0 – 60°C Display resolution 0.1°C pH probe, reusable Combination electrode, digital communication with Control Tower Range: 2 – 12 pH Display resolution: 0.01 pH Foam, alternative level Electrical conductivity sensor, stainless steel, ceramic insulated"		
		Glass culture Vessel:	Material Borosilicate glass, stainless steel AISI 316L, EPDM Total volume [L] 1.6 Working volume: [L] 0.4–1 Cover ports 19 mm 12 mm 6 mm : 3 2 6 Space requirements [W + H + D in mm]: 200 + 540 + 270 [W + H + D in inches]: 7.9 + 21 + 10.6		
		Display	Touch screen 10.1" Tablet to control and monitor		
		Accessories	All accessories to control and run the bio reactor should be supply and mention with the brochures		

		Warranty	2 years comprehensive or more		
43	Bioreactor - 5L	Type of culture	Microbial		
		Mode of Operation	Continuous		
		Culture vessel	Autoclavable, single walled with round bottom		
		Control Tower	5L		
		Footprint bench surface (W+H+D):	200 x 495 x 300 mm		
		Power supply	100 to 240 VAC 50/60Hz, 8 A		
		Operating Temperature	0 °C – 60 °C or close		
		Motor drive	Maintenance free, Quiet direct drive 150 W, 1100 rpm		
		Integrated Pumps	"Quantity 3, Controller Fixed speed (regulated on off) Speed 43 rpm Pump head Watson Marlow 114, Fast Load pump head"		
		Probes and Controllers	"Temperature, separate sensor Temperature control 0 – 40°C Display resolution 0.1°C Temperature integrated in pH probe Temperature control 0 – 60°C Display resolution 0.1°C pH probe, reusable Combination electrode, digital communication with Control Tower Range: 2 – 12 pH Display resolution: 0.01 pH Foam, alternative level Electrical conductivity sensor, stainless steel, ceramic insulated"		

		Glass culture Vessel	"Material Borosilicate glass, stainless steel AISI 316L, EPDM Total volume [L] 1.6 Working volume: [L] 0.4–1 Cover ports 19 mm 12 mm 6 mm : 3 2 6 Space requirements [W + H + D in mm]: 200 + 540 + 270 [W + H + D in inches]: 7.9 + 21 + 10.6"		
		Display	Touch screen 10.1" Tablet to control and monitor		
		Accessories	All accessories to control and run the bio reactor should be supply and mention with the brochures		
		Warranty	2 years comprehensive or more		
44	Small auto clave vessal - 200ml	Material	Stainless steel.304L		
		Chamber material	PTFE lined		
		Volume	200ml		
		Safe temperature	220 degree centigrade		
		Working pressure	3 Mpa or more		
		Tempe heating and cooling speed	5 degree centigrade / min		
		Application	Break down the refractory material quickly / Hydrothermal Treatment		
45	Small auto clave vessal - 500ml	Material	Stainless steel.304L		
		Chamber material	PTFE lined 5mm thickness		
		Volume	500ml		
		Safe temperature	220 degree centigrade		
		Working pressure	3 Mpa or more		
		Tempe heating and cooling speed	5 degree centigrade / min		
		Application	Break down the refractory material quickly / Hydrothermal Treatment		

46	Carbon, Hydrogen, Nitrogen, Sulphur, Oxygen (CHNSO) Analyzer	Application	Fully Automatic Computer controlled rapid determination of Carbon, Hydrogen, Nitrogen, Sulphur and Oxygen Analysis		
		Flash Combustion design with oxidation & reduction process (Double Furnace) with Chromatographic separation by column or equivalent system will be preferable.			
		Furnace:	Two Independent furnaces		
			Facility should be there to use the same furnace for oxygen determination (by pyrolysis) & CHNS as per the application requirement. Facility should be there to use the same furnace for solid / liquid samples as per the application requirement.		
		Separation:	Suitable column or equivalent technique as per the need of food applications.		
		Detectors:	Thermal Conductivity Detector or laterest		
		Automation of Furnace:	Automated switchover (computer controlled) from the left channel (furnace) to the right channel (furnace) or vice-versa. No manual intervention should be needed.		
		Autosampler:	" Solid Samples: Autosampler with 30 or more samples capability		
		Analysis range: (approximately mentioned values or better)	C = 0.01% to 100 %, H = 0.01% to 100 %, N= 0.01% to 100 %, S = 0.01% to 100 % O = 0.01% to 100 %		
		Sample Size:	0.1 Mg to 500 Mg or more depending upon sample nature. Provision for direct Injection of Liquid Samples for high sensitivity. The system must be able to operate one or more elements such as N, C, H, S and O analysis in a single mode.		

		Micro Balance:	Compatible Micro-balance capable of direct transferring the data to the analyzer		
			Weighing Range: 1000 mg or more		
			Readability: 0.01 mg or more		
			Tarring range: full scale		
			Typical settling time: < 9 sec		
		Computer & Printer / software	Branded Computer: i7, 1 TB Hard Disk, 16 GB RAM, Printer - all license software and OS to operate		
		UPS	10 KVA capacity with 60 Min back up.		
		Accessories	Gas cylinders (47 litre capacity): Argon, Helium Oxygen with applicable regulators		
			Accessories to take every measurements as mentioned above should be supplied		
		Consumables:	Consumables needed for 1000 sample analyses should be included in the offer.		
47	Simultaneous Thermogravimetry – Differential Scanning Calorimetry (STA/TG-DSC)	Other features	Facility to upgrade to Isotopic Ratio mass Spectrometer for analysis of C H N & S Isotopes.		
		Warranty	For Furnace 10 years or better under standard operating conditions		
			3 years or more comprehensive		
		Temperature furnace			
		Temperature range	RT to 1600 °C or higher range		
		Heating rate	0.02 to 100 K/min or better		
		Temperature accuracy	± 0.3 K or close		
		Furnace temperature resolution	0.01 K or close		
		Heating time	10 min (RT to 1100 °C) or close		
		Cooling time	20 min (1100 to 100 °C) or faster		
		Balance and Sensor			
		Weighing range	Lower than 250 mg to 1 g or higher		
		Thermogravimetric resolution	0.03 µg		

		Crucible volume	Up to 900 µL		
		Weighing accuracy	0.005% or close		
		Weighing precision	0.01% or better		
		DSC			
		Heat Flow Range	± 400 mW or close or better		
		"Hold Time	0 - 999 min, hour		
		Noise level	10µW or better		
		Vacuum-tight	10 ⁻⁴ mbar (10 ⁻² Pa) or close		
		Gas control	All-Built-in mass flow controllers		
		Gas atmospheres	Inert, oxidizing and vacuum (accessories should be supplied to carryout)		
		Software and Control	Should be supply higher performance PC (or tablet preferred) to run the Instrument		
			"Software (Combined analysis: Comparison and/or evaluation of STA, DSC, TGA measurements in a single presentation) "		
		Upgradable to (Optional feature)	"Connection to an FT-IR via transfer line Coupling to a GC-MS via transfer line"		
		Accessories (Mandatory)	"Sample Pans (alumina-5, platinum-2, aluminum-100 and quartz-2), Crucibles and Plates Other all accessories should be supplied to run a sample with full characteristics reading"		
		Warranty	3 years Comprehensive or more		
47.2	Automatic sample changer (TG-DSC)	available for 10 crucible or more			
		Auto sample for this item will be awarded for the supplier of item 47			

Section VII

Contract Data

The following Contract Data shall supplement and / or amend the Conditions of Contract (CC). Whenever there is a conflict, the provisions herein shall prevail over those in the CC.

CC 1.1(i)	The Purchaser is AHEAD Project, Uva Wellassa University
CC 1.1 (m)	The Project Site(s)/Final Destination(s) is/are Department of Biosystems Technology, Uva Wellassa University, Passara Road, Badulla.
CC 8.1	For notices, the Purchaser's address shall be Deputy Director Procurement (AHEAD/OTS) Uva Wellassa University, Passara Road, Badulla.
CC 11	Goods shall be supplies in compliance with the quality and the specification given.
CC 15.1	CC 15.1—The method and conditions of payment to be made to the Supplier under this Contract shall be as follows For Goods offered within Sri Lanka Payment shall be made in Sri Lankan Rupees within thirty (30) days of presentation of claim supported by a certificate from the Purchaser declaring that the Goods have been delivered and that all other contracted Services have been performed. a) No Advance payment applicable for this contract b) Up to a maximum of ninety (90) percentage of the Contract Price, shall be paid on receipt of the Goods and confirm by the evaluation committee. c) Ten (10) percentage of the Contract price will be hold as Retention for a period of 12 months from the date of commissioning of equipment. d) The Retention shall be paid on completion of Twelve (12) months. During that period supplier shall correct all defects and confirmed by the purchase or his agent.
CC 17.1	A Performance Security – 10% Performance security may be in any of the following way (a) A Bank guarantee issued by a reputed bank operated in Sri Lanka. (b) Cash deposit at the Shroff Counter of the University
CC 26.1	If the supplier fails to deliver any or all of the goods by the date(s) specified above the purchaser may deduct from the payment a sum equivalent to 0.05% of the delivered price of the delayed good, for each day of delay.
CC 26.1	The maximum amount of liquidated damages shall be 10 % from the contract sum.
CC 27.3	The warranty shall remain valid for a period of time specified with the specifications.
CC 27.6	The supplier shall remedy the defects within 3 Months from the date of information by the purchaser.

“Check List”

No	Required Specification	Bidder's Offer			
		Conformity		Page No	Remark
		Yes	No		
1	Company Profile				
2	Business Registration				
3	VAT Registration				
4	List of Clients				
5	Past three year experience in the industry				
6	Manufacturer Authorization				
7	Public Contract Act				
8	Bid Security				
9	Forms of Bids				
10	Price Schedule				
11	Tender Fee				
12	Financial Statement				
Status					

“Bidders must be filled above check List”