MINUTES OF PRE BID MEETING

SUPPLY, DELIVERY, INSTALLATION AND COMMISSIONING OF LABORATORY EQUIPMENT FOR THE DEPARTMENT OF BIOSYSTEMS TECHNOLOGY

Tender No : UWU/AHEAD/RA1/R2/FTS/BST/LE/02
Date & Time : 16th September 2019 & 11.00 a.m.
Venue : Admin Board Room

The Following decisions were made at the Pre Bid Meeting.
At the Pre Bids Meeting following clarification were made against the bidders' questions.

a) Changes in specifications – Specifications of following items were changed at the Pre Bid Meeting (Refer annexure for new specification)

Item No.	Page No.	Item	Specification (Changes Only)	Reference Annexure
01	18	**Bench top** Muffle Furner with temperature programing above **1700°C**	**Working temperature:** RT to1700 °C or above **Capacity:** 25 L or more **Accuracy:** ± 1 °C or closest **Compulsory Accessories:** • 5 - Crucible with lids (Volume: 20ml, 30ml, 50ml, 100ml, 250ml) • 2- pair of tongs • Protective gloves: 2 gloves **After sales services:** 2 years	Annexure 01
02	18-19	Plant Tissue Culture Chamber/Plant controlled environment chamber	**Temperature range:** +4°C to 40°C with 0.5°C adjustment when lights on **Lux:** 23000-35000 **Accuracy:** +5 °C to 40 °C or closest **Optional:** CO_2 sensor **Doors:** Inner door tempered glass and outer door solid **Certifications:** ISO & CS **Lighting:** Slandered cool florescent light/Or Full spectrum LEDs. Light intensity control in lux 23000-35000. Multi-Processor control **Humidity:** 50% to 90% RH in the chamber or closest. Design to minimize condensation. **Control Panel:** Touch screen LED/LCD display or control keys	

		Accessories		
		Plant Tissue Culture boxes	**Quantity:** 200 pcs	
03	19	Microbial Incubation chamber/ Microbial incubator	**Capacity:** Chamber capacity of 550L or closest **Control Panel:** Touch screen LED/LCD display or control keys. **Number of Shelves:** At least 04 **Door:** Inner door tempered glass & outer door solid	
04	19-21	Potentiostat Galvanostat **with suitable PC**		

Deputy Director Procurement
AHEAD/OTS
Uva Wellassa University

Revised Technical Specifications

Supply, Delivery, Installation & Commissioning of Laboratory Equipment for the Department of Biosystems Technology
Faculty of Technological Studies
UWU/AHEAD/RA1/R2/FTS/BST/LE/02

Annexure 01

No	Item	Specifications	Bidders' Response
01	**Bench top Muffle Furner with temperature programing above 1700°C**	**Working temperature:** RT to1700 °C or above	
		Capacity: 25 L or more	
		Material: Stainless steel SS316 and ceramic	
		Insulation: Ceramic fiber	
		Uniformity: ± 5 °C	
		Control: PID auto & programmable - user required time program (more than 3 steps) is mandatory	
		Accuracy: ± 1 °C or closest	
		Atmosphere optional: Work with inert gas like Argon, Nitrogen	
		Warranty: One year or more	
		Compulsory Accessories:	

		5 - Crucible with lids (Volume: 20ml, 30ml, 50ml, 100ml, 250ml) 2 - pair of tongs Protective gloves: 2 gloves	
		After sales services: 2 years	
02	**Plant Tissue Culture Chamber/Plant controlled environment chamber**	**Use:** Growth/differentiation/incubation of cultures established in vitro by tissue culture.	
		Mandatory features: Unit should provide controlled environment conditions. i.e., Microprocessor-controlled temperature, relative humidity and light intensity.	
		Capacity: Chamber capacity of 750 L or closest	
		Temperature range: +4°C to 40°C with 0.5°C adjustment when lights on	
		Lux: 23000-35000	
		Accuracy: +5 °C to 40 °C or closest	
		Optional: CO_2 sensor	
		Doors: Inner door tempered glass and outer door solid	
		Certifications: ISO & CS	
		Temperature uniformity: 0.5°C or better across the chamber	
		Lighting: Slandered cool florescent light/Or Full spectrum LEDs. Light intensity control in lux 23000-35000. Multi-Processor control	
		Light regime control: Timer for light regime control (24 hour setting).	
		Humidity: 50% to 90% RH in the chamber or closest. Design to minimize condensation. **Shelf/Tiers:** 3-4 or closest. Shelf/Tiers height is adjust to fit different tissue culture vessels.	
		Material: Corrosion & chemical resistant interior and exterior material.	
		Control Panel: Touch screen LED/LCD display	

		or control keys	
		Electrical Requirements: 230 V, 50 Hz	
		Warranty: Two years comprehensive warranty or better	
	Accessories		
	Plant Tissue Culture Boxes	Polycarbonate Magenta Plant Culture Boxes with polypropylene lid.	
		Autoclavable: Resistant at 121°C and 105 kpa	
		Color: Clear/Fully transparent body	
		Size: 3x3x4" LxWxH or closest	
		Quantity: 200 pcs	
3	**Microbial Incubation chamber/ Microbial incubator**	**Use:** For optimal growth of microbiology cultures in petri plates and culture tubes.	
		Temperature range: RT+5°C to 60°C or closest.	
		Temperature adjustment/increment: 0.5°C.	
		Temperature uniformity: 0.5°C or better across the chamber	
		Capacity: Chamber capacity of 550L or closest	
		Material: Corrosion and chemical resistant interior and exterior material.	
		Control Panel: Touch screen LED/LCD display or control keys.	
		Electrical Requirements: 230 V, 50 Hz	
		Number of Shelves: At least 04	
		Door: Inner door tempered glass & outer door solid	
		Warranty: Two years comprehensive warranty or better	
4	**Potentiostat Galvanostat with suitable PC**	Electrode connections 2, 3, and 4	
		Potential range: +/- 10 V	
		Compliance voltage: +/- 30 V	
		Maximum current: +/- 10 A	
		Current ranges: 1 A to 1 nA, in 9 decades or similar	

		Potential accuracy: +/- 0.2% or better	
		Potential resolution: 0.3 µV or more	
		Current accuracy: +/- 0.2% or better	
		Current resolution: 0.0003% of current range or better	
		Input impedance > 1 TOhm	
		Potentiostat bandwidth 1 MHz	
		Computer interface USB 3 or latest method	
		Control software should analyze all the data of • voltametric analysis • Cyclic and linear sweep voltammetry • Ampherometric analysis, Impedance analysis • Chrono methods • Rotating disc electrode (RDE) control • Export and import data as .txt files	
		Rotating Disk Electrode options Speed control both Manual and software (same software of the Potentiostat is preferred) • Motor speed highest - 10,000 RPM or higher • Motor speed lowest - 100 RPM or less • Resolution - 1 RPM or better • Acceleration/deceleration 4,000 RPM/s or better • Maximum current ~ 500 mA or higher • Contact - Sealed Hg pool or latest better option • Electrode tips - 3 mm and 5 mm	
		Impedance Analysis • Frequency range - 10 µHz - 1 MHz or better • Frequency resolution 0.003% or better • Input range +/- 10 V • Signal types 1 sine, 5 sine, 15 sine • Input channels E and i from the potentiostat/galvanostat or external signals	

		• AC amplitude ~ 0.2 mV to 0.35 V rms • Data presentation Nyquist, Bode, Admittance, Dielectric, Mott-Schottky	
		Accessories required • Faraday cage • Reference electrode (Ag/AgCl or SCE), • counter electrodes • Pt, and GC (Active area 3mm) • Ag, Au, Pt, GC, and empty electrodes (Active area 5mm) • Cell setup to use RDE and normal cells with Stainless steel metal stand and Pyrex Glasses or better option • Magnetic stirrer and magnets relevant to the setup •Dummy Cell, All cables for measurements and connect models and accessories, Crocodile clips	