



ACU/ACU-CRI/Minor/ 886 /2020-21

Date: 26.02.2021

### RETENDER NOTIFICATION

Adichunchanagiri University is inviting **closed tender** for the supply of minor equipment for the Adichunchanagiri University -Centre for Research and Innovation (ACU-CRI) from the competitive firms.

1	Name of the work	Supply of minor equipment for ACU -Centre for Research and Innovation
2	Tender documents available for download	26-02-2021 to 9-03-2021 up to 5:00 PM

Sl. No.	Requirements for Adichunchanagiri University -Centre for Research and Innovation	Quantity (in No's)
<b>Minor Equipment</b>		
1.	Horizontal Sub-marine Agarose Electrophoresis System with Digital Power supply and Timer	01
2.	Autoclave	01
3.	Deep Freezer with Voltage Stabilizer	01
4.	Digital Heat Block	01
5.	Ultrasonic Bath Sonicator	01
6.	Gel Rocker	01
7.	Heating Mantle	01
8.	Motorless Magnetic Stirrers	01
9.	Magnetic Hot Plate Stirrers	01
10.	pH Meter	01
11.	Portable Vacuum Pump - Oil free	01
12.	Mini Centrifuge	01
13.	Cyclomixer (Vortexer)	01
14.	Water Bath	01
15.	Microplate Shaker Digital	01
16.	UV Torch - hand held lamp with quartz filter	01
17.	PCR Workstation with HEPA filter	01
18.	Laboratory Refrigerator	01
19.	Microwave Oven	01
20.	Mini Handheld Homogenizer with Pestle	01
21.	Magnetic Stirrer with Oil Bath	01
22.	HPLC Semi Preparative Column	01
23.	Microwave oven for Nanomaterial synthesis	01
24.	Microtome for Tissue Sectioning	01
25.	TLC Plate viewer / UV Cabinet	01

**Note:** Kindly send quotes in 2 bid formats (Technical and Financial bids sealed separately inside the main envelope for individual items) to be addressed to "The Registrar, Adichunchanagiri University, B.G. Nagara -571448, Nagainagara (T), Mandya (D)".

- Adichunchanagiri University reserves all the rights to accept, reject, incorporate changes and re-tender without giving any reasons.
- The sealed cover must be duly superscripted with the name of the equipment along with the words "ACU-CRI (Name of the equipment)".  
e.g., ACU-CRI Autoclave.
- Provide Brochure, Certification of the product, Bank/account details, PAN and GSTIN. **Kindly mention the details of the contact person on the envelope.**

### Technical Specifications

1. Horizontal Sub-marine Agarose Electrophoresis System with Digital Power supply and Timer	
Gel running trays	140 × 150 mm - 1 No, 70 × 150 mm - 2 Nos, 70 × 70 mm - 4 Nos (W × L)
Gel casting Tray	Compatible to gel running trays - 2 No.
Acrylic comb 1.5 mm	21-well - 3 Nos (Compatible to 140 × 150 mm gel running tray) 10-well - 4 Nos (Compatible to 140 × 150 mm & 70 × 150 mm gel running trays) 08-well - 4 Nos (Compatible to 140 × 150 mm & 70 × 150 mm gel running trays) 06-well - 4 Nos (Compatible to 70 × 150 mm gel running tray)
Back ground sticker	Yes
Cords	2 sets
Platinum electrodes	1 set
• Digital Power supply and Timer specifications	
Input Voltage	230 V ± 10% AC 50 Hz.
No of Outputs	4 Nos
Output voltages	0-500 V insteps of 1 V
Output current	0-500 mA insteps of 1 mA
Digital Timer	24 hours
Voltage Display	Digital LED display
2. Autoclave	
Capacity	90-100 L
Electrical Power	230V ± 10% AC 50 Hz
Working pressure and Temperature	1.2 to 2.2 Kg/sq.cm at 121°C





Material of Construction	Stainless Steel
Gasket	Heat resistant SILICON door gasket withstand upto 140°C
Safety devices	Pressure switch and safety valve, self-locking of door when chamber is under pressure. Vacuum breaker for jacket Steam generator with gauge glass valves and Low water protection with audio visual indicator.
Digital Timer	Yes

### 3. Deep Freezer with Voltage Stabilizer

Internal Volume	500 Liters
Numbers of Trays	5
Internal Dimensions (W × D × H)	640 × 755 × 1030 mm
External Dimensions (W × D × H)	800 × 975 × 1620 mm
Minimum Temperature	-20°C
Insulation (CFC free polyurethane foam)	70 mm minimum for Body & 80 mm for Door
Temperature control	Microprocessor
Display	1"-7 Segment, Big Size LED
Power Failure Alarm	Audio Visual Alarm
Door Open Alarm	Audio Alarm in case door open for over one minute
Internal Body Material	Stainless Steel - 304 grade (Standard Models), Stainless Steel - 316 grade (GMP Models)
External Body Material	Powder Coated CRCA Steel (Standard Models), Stainless Steel - 304 grade (GMP Models)
Noise Level	Less Than 65 db (A)
Voltage Stabilizer	VS-03
Electrical	220-240 volts, 50Hz, Single Phase

### 4. Digital Heat Block

Input Voltage	230 V ± 10% AC 50 Hz.
Temperature Range	Ambient +5 to 120°C
Dimensions (L x W x H)	39.1 × 20.3 × 8.9 cm
Temperature Stability	± 0.1°C
Temperature Uniformity	± 0.1°C
Heat Up Time to 100°C	30 minutes
Compatible for microtubes with capacity	0.5 ml, 1.5 ml and 2 ml
Timer	Yes
Display	Digital

**5. Ultrasonic Bath Sonicator****Type I:**

Input Voltage	230 V $\pm$ 10% AC 50 Hz.
Tank Dimensions (L x W x H)	350 $\times$ 240 $\times$ 250 mm
Tank capacity	15 L
Ultrasonic Power (W)	200-300
Operating frequency	40 $\pm$ 5 KHz
Heater	Yes
Temperature range	30 to 80°C
Sleep mode	Yes
Drain facility	Yes
Noise level	< 65 db
Timer, Continuous	Yes, 0.1 - 99.9 min digital

**Type II:**

Input Voltage	230 V $\pm$ 10% AC 50 Hz.
Tank Dimensions (L x W x H)	240 $\times$ 140 $\times$ 100 mm
Tank capacity	3 L
Ultrasonic Power (W)	200
Operating frequency	40 $\pm$ 5 KHz
Heater	Yes
Temperature range	30 to 80°C
Sleep mode	Yes
Drain facility	Yes
Noise level	< 65 db
Timer, Continuous	Yes, 0.1 - 99.9 min digital

**6. Gel Rocker**

Input Voltage	230 V $\pm$ 10% AC 50 Hz.
Platform size	280 $\times$ 280 mm
Tilt Angle	7 - 12 Degree
Speed Variable	Variable from 0 to 80 oscillations per minute
No of Platforms	One Platform
Platform mat	Rubber mat with stripes
Max. weight	Single platform 3.5 Kgs
Action	See-saw movement
Timer	Yes, 0-60 min digital





7. Heating Mantle	
<b>Type I:</b>	
Input Voltage	220 V $\pm$ 10% AC 50 Hz.
Round-bottom flask	500 ml
Operation time	continuous
Maximum Temperature	Upto 400°C
PID Temperature controller	Yes
<b>Type II:</b>	
Input Voltage	220 V $\pm$ 10% AC 50 Hz.
Round-bottom flask	1000 ml
Operation time	continuous
Maximum Temperature	Upto 400°C
PID Temperature controller	Yes
8. Motorless Magnetic Stirrers	
Max. RPM	1500 RPM
Speed Setting	15 to 1500 RPM (at every 50 RPM)
Set - up plate material	Stainless Steel
Speed indicator	Yes
Temperature range	5 - 40°C
Relative humidity	80%
Voltage	220 - 240 V
Frequency	50 Hz
Load capacity (Water)	1.5 L
Pulse function	Yes
Dimensions (W $\times$ D $\times$ H)	Approx. 200 $\times$ 264 $\times$ 20 mm
Protection Class	IP65
9. Magnetic Hot Plate Stirrers	
Max. capacity	5 L
Max. speed (rpm)	2200
Stirring positions	One
Set up plate	Ceramic
Protection Class	IP21
Dimension (W $\times$ D $\times$ H)	220 $\times$ 330 $\times$ 115 mm
Set up plate	180 $\times$ 180 mm
Display	Digital

Temperature range	From ambient - 350°C	
Temperature accuracy	±1°C	
<b>10. pH Meter</b>		
pH	Range	-2.00 to 16.00 pH
	Resolution	0.01 pH
	Accuracy	+0.01 pH
	Calibration Points	up to 3 points
	Buffer options	USA (pH 4.01/7.00/10.01) or NIST (pH 4.01/ 6.86/9.18)
mV	Range	+1999 mV
	Accuracy	+ 1 mV
	Resolution	1mV
Temperature	Range	0 to 105°C
	Accuracy	+0.5°C
	Resolution	0.1°C
	Compensation	0-100°C. Manual / Automatic
General	Hold Function	Available
	Auto Off Function	Available
	Connector	BNC
	Display	LCD (135x 75mm)
	Power Requirements	DC9V, using AC adapters, 220VAC/50Hz
	Dimensions (L×W×H)	210 × 205 × 75 mm
<b>11. Portable Vacuum Pump - Oil free</b>		
Max. Vacuum	650 mmHg	
200 mmHg	2 sec	
300 mmHg	3 sec	
400 mmHg	4 sec	
500 mmHg	6 sec	
600 mmHg	11 sec	
650 mmHg	18 sec	
Max. flow rate	15-23 L/min	
Motor rotation	1400 RPM	





Horse Power	1/6 - 1/8 HP
Pole	4P
Noise Level	54 db
<b>12. Mini Centrifuge</b>	
Speed RPM / RCF (g)	6000 / 2000 g
Digital Display	Yes
Noise Level	< 55 dB
Power Supply	Universal (95 to 230V, 50/60Hz)
Dimensions (W × D × H)	162 × 157 × 115 mm
Rotors and Adaptors (included in standard pack)	8 Slot × 1.5 or 2.0 ml Closed Rotor PCR Strip Rotor (2 × 8 × 0.2 ml) Reduction Adaptors for 0.2 / 0.4 ml microtubes
<b>13. Cyclomixer (Vortexer)</b>	
Max. Speed	Upto 3000 rpm
Capacity	1.5 ml, 15 ml & 50 ml tubes
Rolling Movement	Yes
Shaking Movement	Orbital
Driven Type	DC Motor
Run Type	Continuous and touch operation
Input Voltage	230 V ± 10% AC 50 Hz.
Inter changeable Mixing Heads	Universal top plate 100 mm - plate attachment Tube adapter for 18 holes test tubes Tube adapter for 8 holes test tubes
<b>14. Water Bath</b>	
<b>Type I:</b>	
Temperature Range	Ambient to 100°C
Accuracy	± 0.1°C
Temperature Uniformity	± 0.1° at 37°C
Temperature Stability	± 0.5° at 37°C
Internal dimensions (W × D × H)	300 × 150 × 200 mm
Capacity	6 L
Display	Digital to 0.1°C
Input Voltage	230 V ± 10% AC 50 Hz.
<b>Type II:</b>	

Temperature Range	Ambient to 100°C
Accuracy	± 0.1°C
Temperature Uniformity	± 0.1° at 37°C
Temperature Stability	± 0.5° at 37°C
Internal dimensions (W × D × H)	300 × 325 × 200 mm
Capacity	15 L
Display	Digital to 0.1°C
Input Voltage	230 V ± 10% AC 50 Hz.

**Type III :**

Temperature	Constant at 37°C
Accuracy	± 0.1°C
Temperature Uniformity	± 0.1° at 37°C
Temperature Stability	± 0.5° at 37°C
Internal dimensions (W × D × H)	300 × 150 × 200 mm
Capacity	6 L
Display	Digital to 0.1°C
Input Voltage	230 V ± 10% AC 50 Hz.

**15. Microplate Shaker Digital**

Max. Speed	150-1200 RPM
Speed Control Accuracy	± 1% of set speed up to 299rpm ± 2% 300 to 1200rpm
Motion	Orbital (4 mm displacement)
Display	Digital display of LED Speed & Time
Control	Electronic DC Control
Plate capacity	Four micro plate holders
Tray Size	270 × 200 mm
Timer	0 (Continuous), 1min - 99h 59min
Dimensions (L x W x H) Exterior	487 × 387 × 264 mm
Dimensions (D x W x H) Interior	383 × 260 × 145 mm
Dimensions (L × W) Platform	275 × 235 mm

**16. UV Torch - hand held lamp with quartz filter**

Input Voltage	230 V ± 10% AC 50 Hz.
Wavelength	254 nm and 365 nm





UV filter size	50 × 150 mm
No. of UV Tubes	6W×1= 254 nm 6W×1= 365 nm
<b>17. PCR Workstation with HEPA filter</b>	
Working area (L×W×H)	600 mm × 600 mm × 600 mm
Construction	Stainless Steel working area/ MS frames
Front panel	UV proof visible sheet
Fluorescent white tube	1 No.
UV light	1 No.
Input voltage	230V 50 Hz. ± 10% AC
Digital Timer for UV Tubes	Yes
<b>18. Laboratory Refrigerator</b>	
<b>Type I:</b>	
Capacity	12 cu. ft. (339 L)
Temperature Range	2° to 10°C
Doors	1
Shelves	4
Interior (D × W × H)	20.75 x 21 x 45.75 in. (527 × 533 × 1162 mm)
Exterior (D × W × H)	25 x 24.75 x 75.8 in. (635 × 629 × 1926 mm)
<b>Type II:</b>	
Capacity	335 litres
Annual Energy Consumption	212 Kilowatt Hours
Refrigerator Fresh Food Capacity	248 litres
Freezer Capacity	87 Litres
Installation Type	Freestanding
Special Features	Inverter, Convertible, Stabilizer free operation, Door Lock
Voltage	230 Volts
Defrost System	Frost Free
Shelf Type	Glass
Certification	Energy Star
Material	Stainless Steel
<b>19. Microwave Oven</b>	
Capacity	20 L
Annual Energy Consumption	150 Watts
Installation Type	Countertop

Oven Cooking Mode	Solo
Burner Type	Ceran / Ceramic
Colour	Black
Voltage	230 Volts
Fuel Type	Electric
Defrost System	Defrost

#### 20. Mini Handheld Homogenizer with Pestle

Speed Range	0 - 10000 rpm
Working Volume	0.5 - 2 ml
Voltage	AC 220V,50Hz or with AA Batteries
Microtube compatible Pestle	1.5 ml and 0.5 ml

#### 21. Magnetic Stirrer with Oil Bath

Temperature range	20°C to 300°C
Accuracy	± 0.5°C
Temperature controller:	Digital Temperature controller
PT 100 Sensor	External / Internal
Speed	1800 rpm
Display	Digital Display
Capacity	5 L
Control	Variable DC linear control
Motor	High Torque BLDC Motor
Magnet	High power U magnet
Safety Circuit	25°C above set temperature
Plate Size	146 Dia
Plate Material	316 Chemical Resistance
Dimension	W × D × H (150 × 230 × 110) mm
Bottom Bush	Anti-Skid Leg Bush
Heating Power	600 to 800w
Safety	Thermostat Safety Cut off
Operating voltage	230v AC @ 50 Hz

#### 22. HPLC Semi Preparative Column

Column length	10 cm
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Particle size	5 $\mu\text{m}$
Particle Substrate	Hybrid
Pore Size	130 $\text{\AA}$
Surface Area	185
System	HPLC Preparative
pH Range	1-12
Temperature Limits	80°C (Low pH)/60°C (High pH)
Maximum Pressure	6000 psi (415 Bar)

### 23. Microwave oven for Nanomaterial synthesis

Cavity Material	Stainless Steel
Door Opening Mechanism	Pull Down Handle
Turntable	Yes
Child Lock	Yes
Racks & Trays Available	Low Rack, High Rack, Motorised Rotisserie, Rotisserie Handle, Multi Rotisserie
Other Convenience Features	Quartz Heater, Charcoal Lighting Heater
Power Output	900 W
Power Consumption - Grill	1250 W
Power Consumption - Convection	2400 W
Other Power Features	Combination (Maximum): 2400 W
Technology Used	Lightwave Technology, Intellowave Technology
Other Features	Active Convection, Speed Combi: 5, Next Step Guide
Width	53 cm
Height	32.2 cm
Depth	53.3 cm
Turntable Diameter	34 cm

### 24. Microtome for Tissue Sectioning

Type	Motorized
Nominal Supply Voltage	230 V AC
Nominal Frequency	50/60 Hz
Maximum Power Consumption	100 VA
Protection Class	I
Power Fuses	2 x T 3.15 AL, 250V
Pollution Degree	2
Overvoltage Category	II
Maximum Heat Emission	80 J/s

Operating Temperature Range	+18°C to +30°C
Temperature Range During Storage	+5°C to +50°C
Relative Humidity During Operation	20% to Max. 80% Non-Condensing
Relative Humidity During Storage	10% to Max. 85% Non-Condensing
Width (including handwheel and coarse feed wheel)	477 mm
Depth (including waste tray)	620 mm
Height (without top tray):	295 mm
Specimen Feed	approx. 24 mm ±1 mm
Vertical Stroke	70 mm ±1 mm Large Standard Clamp: 55 × 50 × 30 mm Super Clamp: 68 × 48 × 15 mm
Motorized Sectioning Speeds	0 - 420 mm/s ±10%
Specimen Retraction	In Manual Sectioning Mode: 5 - 100 µm (in 5 µm increments); can be turned off In Motorized Sectioning Mode: Speed-Dependent; can be turned off
Specimen Orientation	± 8° (Horizontal and Vertical)
Section Thickness Settings	Range: 0.5 - 100 µm Setting Values: 0.5 - 5 µm (in 0.5 µm increments) 5 - 20 µm (in 1 µm increments) 20 - 60 µm (in 5 µm increments) 60 - 100 µm (in 10 µm increments)
Trimming Section Thickness Settings	Range: 1 - 600 µm Setting Values: 1 - 10 µm (in 1 µm increments) 10 - 20 µm (in 2 µm increments) 20 - 50 µm (in 5 µm increments) 50 - 100 µm (in 10 µm increments) 100 - 600 µm (in 50 µm increments)
Handwheel Lock / Brake	2 Mechanical Locks, 1 Electronic Brake
Safety Hand Wheel	Handle can be Centered
Coarse Feed Wheel Turn Direction	User-Selectable - Clockwise or Counter-Clockwise
Waste Tray	Type: Antistatic Volume: 1400 ml
Remaining Feed Indicator	Visual and Acoustical
<b>25. TLC Plate viewer / UV Cabinet</b>	
Input Voltage	230 V ± 10% AC 50 Hz.
UV exposed area	300 × 300mm
UV tubes	254 nm and 365 nm





UV window	UV protective shield
UV area	Rubber mat with stripes
Max. weight	6 kgs
Unit protection	Through fast blow
Features	Dual wavelength, MS powder coated finish, 254 and 365 nm with separate range selector switch, white fluorescent light for inside chamber visibility, viewing window with UV protective shield, unit is protected by fast blow fuse

**Dr. C.K. Subbaraya**  
Registrar  
Adichunchanagiri University  
B.G.Nagara-571448

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