



ACU/PS/137/11 / 181 /2023-24

Date: 26/02/2024

TENDER NOTIFICATION

The Adichunchanagiri University invites **closed tenders** from eligible tenderers or bonafide licensed manufacturer or their authorised local supplier/dealer/distributor in the state of Karnataka for the procurement of the **Supply of Electro Chemical Workstation and Battery tester** at ACU CRI Lab as per section I & II.

1	Name of the work	Supply of Electro Chemical Workstation and Battery tester for Centre for Research and Innovation (CRI) Laboratory at Adichunchanagiri University , B.G. Nagara
2	Last date for tender submission	On or Before 04.03.2024 up to 05:00 PM

Sl. No.	Name of the consumables Particulars	Qty. (In Nos)
1.	Electro Chemical Workstation	1
2.	Battery tester	4

SECTION - I

Instruction to Tenderers

1. The Tenderer shall send quotes in 2 bid formats (Technical and Financial bids sealed separately inside the main envelope for any or all list of items) on professional business letterheads. The inner and outer sealed cover must bear the following identification
 1. Tender for[name of service | Contract]
 2. Tender Reference No.....[insert number]
 3. Address to "The Registrar, Adichunchanagiri University, B.G. Nagara -571448, Nagamangala (T), Mandya (D)"
 4. The tenderer who prefers to submit the tender through Post can dispatch the same through Registered Post / Speed Post or Courier so as to reach the above address on or before the due date and time specified in the Tender Notice. Tenders received after the due date and time, for what so ever reasons will not be considered and the authority, ACU BG-Nagara will not be liable or responsible for the same.
2. **Tender Currency:** Prices shall be quoted in Indian Rupees Only
 3. **AMC/CMC (If any)** is subject to the Adichunchanagiri University's norms.



4. **Warranty:** Refer Technical specifications for the warranty period
5. **Amendment of Tender Documents:** At any time prior to the deadline for submission of tenders, the University may, for any reason, whether at its own initiative or otherwise, modify the tender documents by amendment. Adichunchanagiri University reserves all the rights to accept, reject, incorporate changes and re-tender without giving any reasons.
6. **Documents Comprising the Tender:** Shall attach Brochure, Certification of the product, Bank/account details, PAN, GSTIN, Good Standing Certificate and 02 Years of ITR declaration inside the envelope and company contact details with email ID on the main envelope cover for further correspondence.
7. **Tender Prices:** Prices indicated on the Price Schedule shall be entered separately I.e. the price of the goods, quoted (ex-works, ex-factory, ex-showroom, ex-warehouse, or off-the-shelf, as applicable), including all duties and sales and other taxes already paid or payable. Any Indian duties, sales and other taxes which will be payable on the goods if this Contract is awarded. Conditional tenders will not be considered.
8. **Validity of the Bid:** 90 Days from the last date of submission of bid
9. **Corrupt or Fraudulent practices:** The Adichunchanagiri University requires that the Tenderers, observe the highest standard of ethics during the procurement and execution of such contracts. In pursuance of this policy:
 1. will reject a proposal for award if it determines that the Tenderer recommended for award has engaged in corrupt or fraudulent practices in competing for the contract in question;
 2. will declare a firm ineligible, either indefinitely or for a stated period of time, to be awarded a university contract if it at any time determines that the firm has engaged in corrupt or fraudulent practices in competing for, or in executing, a University contract.
10. **Process to be confidential:** Information relating to the examination, clarification, evaluation, and comparison of Tenders and recommendations for the award of a contract shall not be disclosed to Tenderers or any other persons not officially concerned with such process until the award to the successful Tenderer has been announced. Any effort by a Tenderer to influence the Employer's processing of Tenders or award decisions may result in the rejection of his Tender.
11. **Clarification of Tenders:** To assist in the examination, evaluation, and comparison of Tenders, the Employer may, at his discretion, ask any Tenderer for clarification of his Tender, including breakdowns of unit rates. The request for clarification and the response shall be in writing or by cable, but no change in the price or substance of the Tender shall be sought, offered, or permitted except as required to confirm the correction of arithmetic errors discovered by the Employer in the evaluation of the tenders.



12. **Delivery:** The successful BIDDER should commence the services as per tender document/Work or Purchase Order. For any queries/ assistance, please write to registrar@acu.edu.in or telephone to purchase section +91- 7406907357.
13. **Penalty Clause:** Non-execution of supply order - For the reasons of failure to supply partially or completely within the stipulated time or any event of breach of contract. In case at any following stages
1. For the delayed supply (3 days of grace period) - 5% deduction
 2. Quantity issues - 5% deduction
 3. Quality issues - 10% deduction

SECTION -II

PART-A

1. Technical specifications for Electro Chemical Workstation: 1 Number

The system should capable of handling various Electro chemical research, like sensor, supercapacitor/Battery/Corrosion /Fuel cell & Photovoltaic

Specifications

Compliance Voltage: $\pm 18V$ or more

Applied voltage: $\pm 12 V$ or more

Voltage accuracy: 0.1% or better

Voltage Resolution: 0.1% or better

Current ranges: $\pm 5nA$ - $\pm 500mA$, with 6 or more current ranges

Maximum applied current: $\pm 500mA$

Current accuracy: 0.1% or better

Current Resolution: 0.1% or better

Electrode connection: 2, 3 & 4

Impedance Frequency range from 10 μHz to 3 MHz or better

Amplitude: 10uV to 5V or better

Computer interface: USB/Ethernet



Software requirements:

- Voltammetry Software-Open Circuit Voltage, Cyclic Voltammetry, Cyclic Voltammetry Advanced Gal. Cyclic Voltammetry, Linear Sweep Voltammetry, Staircase Voltammetry, Chrono Potentiometry, Chrono Amperometry Chrono Coulometry, Square Wave Voltammetry, Differential Pulse Amperometry, Differential Pulse Voltammetry
- Impedance Spectroscopy software- Galvano Electrochemical Impedance Spectroscopy, Potentio Electrochemical Impedance Spectroscopy, Staircase Potentio Electrochemical Impedance Spectroscopy [Schottky], HFR Measurement.
- Corrosion: Potentiostatic/Galvanostatic- Galvanodynamic, E corr vs. Time, Linear Polarization Resistance, Pitting Corrosion, Tafel Plot, Zero Resistance Ammeter,
- Battery/Super capacitor: Single Charge or Discharge, Gal. Charge and Discharge Cycle Expert Charge and Discharge Cycle, Potentiostatic Intermittent Titration Technique [PITT] Galvanostatic Intermittent Titration Technique [GITT], Constant Power

Photovoltaic& Fuel cell- I-V Characterization, Constant Power
Constant Voltage, Constant Current

- Complete analysis software for CV
- EIS circuit fitting software
- Free Life time up gradation of the software.

Accessories required.

1. Computer with updated software: specifications- i7 processor, 16 GB Ram, 1TB SSD
2. Oscilloscope: Tetronix TBS1102C-100MHz Bandwidth. 2 channel Digital Storage Oscilloscope. (To measure the current and voltage)
3. Electrochemical Cell System includes: 4 glass cells with one Cell top, 3 Glassy carbon Working Electrode, 1 Ag/AgCl Reference (aq), 1 Pt Wire Counter Electrode, 1 Cell Stand, 1 Solid sample Holder

Warranty:

02 years Manufacturer's warranty + 3 years AMC should be provided.



PART-B

1. Technical specifications for Battery tester: 3 Numbers

5V50mA Battery Testing System									
	5	V	50	mA	Battery Testing System	SN:	CT-4008T	-5V50mA	-HWX
Items					Values				
Input AC					AC 220V/110V ±10% / 50Hz				
Input power					25 W				
Resolution					AD:24bit; DA:16bit				
Input impedance					≥1G Ω				
Voltage	CV output range				25mV~5V				
	Min discharge voltage				-5V				
	Accuracy				± 0.05% FS				
	Stability				± 0.05% FS				
Current	Output range/channel				Range1: 5µA-1mA; Range2: 1mA-25mA; Range3: 25mA-50mA				
	Accuracy				± 0.05% FS				
	CV cut-off current				Range1: 2µA; Range2: 50µA; Range3: 100µA				
	Stability				± 0.05% FS				
Power	Output power/channel				0.25 W				
	Stability				± 0.1% FS				
Time	Current response time				<500µs (10%FS~90%FS)				
	Working step time				≤(365*24)h/step Time format-00:00:00.000(h, m, s, ms)				
Data record	Data record conditions				Min data record interval:100ms				
					Min voltage change: 10mV				
					Min current change: 2µA; 50µA; 100µA				
Frequency				10Hz					
Charge	Charge modes				CC, CV, CCCV, CP				
	Cut-off condition				Voltage, Current, Time, Capacity, Energy, -ΔV				
Discharge	Discharge modes				CC, CV, CCCV, CP, CR				
	Cut-off condition				Voltage, Current, Time, Capacity, Energy				
Pulse	Charge				CC, CP				
	Discharge				CC, CP				
	Min pulse width				500ms				
	Pulse counts				Up to 32				
	Chg and Dschg switch				Supported				
	Cut-off condition				Voltage, Time				



DCIR	Calculated DCIR values available in BTSDA	
Cycle	Max cycles	65535
	Max steps	254
	Cycle nest	3
Protection	Safety protection	<ul style="list-style-type: none"> • Power-failure data protection
		<ul style="list-style-type: none"> • Offline operation mode
		<ul style="list-style-type: none"> • User-defined protection conditions, such as upper and lower limited current/voltage, delay time, temperature, etc.

Channels feature	Independent pairs of closed loop for constant
Channels control mode	Independent control
Data acquisition method	Kelvin connection
Noise	<45dB
Database	MySQL
Communication	TCP/IP
Operating system	Windows 7/8/10 64bit
Data export	EXCEL, TXT, CSV, PDF, Plot/Graph
Min. disk drive	500GB
Communication port	Ethernet port
Leak Current	0.005 μ A
Channels per unit	8

Operation and storage environment requirement

Items	Values
Operation environment temperature	0°C~40°C (When the temperature is 25 \pm 10°C, the accuracy offset caused by temperature is less than 50ppm /°C)
Storage environment temperature	-10°C~50°C
Operation environment humidity	\leq 70% RH(no moisture condensation)
Storage environment humidity	\leq 80% RH(no moisture condensation)



2. Technical specifications for Battery tester: 1 Number

5V6A Battery testing system										
		5	V	6	A	Battery Testing System	SN:	CT-4008T	-5V6A	204n-S1-FF
Items					Values					
Input AC					AC 220V \pm 10% / 50Hz					
Input power					425 W					
Resolution					AD:24bit; DA:16bit					
Input impedance					\geq 1M Ω					
Voltage	CV output range				25mV~5V					
	Min discharge voltage				-3V					
	Accuracy				\pm 0.05% FS					
	Stability				\pm 0.05% FS					
Current	Output range/channel				Range1: 0.5mA-0.1A; Range2: 0.1A-3A; Range3: 3A-6A					
	Accuracy				\pm 0.05% FS					
	CV cut-off current				Range1: 0.2mA; Range2: 6mA; Range3: 12mA					
	Stability				\pm 0.05% FS					
Power	Output power/channel				30	W				
	Stability				\pm 0.1% FS					
Time	Current response time				<1ms (10% FS~90% FS)					
	Working step time				\leq (365*24)h/step Timeformat-00:00:00.000(h, m, s, ms)					
Data record	Data record conditions				Min data record interval:100ms					
					Min voltage change: 10mV					
	Min current change: 0.2mA;6mA;12mA									
Frequency				10Hz						
Charge	Charge modes				CC, CV, CCCV, CP					
	Cut-off condition				Voltage, Current, Time, Capacity, Energy, $-\Delta V$					
Discharge	Discharge modes				CC, CV, CCCV, CP, CR					
	Cut-off condition				Voltage, Current, Time, Capacity, Energy					
	Charge				CC, CP					
	Discharge				CC, CP					
	Min pulse width				500ms					
	Pulse counts				Up to 32					



Pulse	Chg and Dschg switch	Supported
	Cut-off condition	Voltage, Time
DCIR	Calculated DCIR values available in BTSDA	
Cycle	Max cycles	65535
	Max steps	254
	Cycle nest	3
Protection	Safety protection	• Power-failure data protection
		• Offline operation mode
		• User-defined protection conditions, such as upper and lower current/voltage, delay time, temperature, etc.

Channels feature	Independent pairs of closed loop for constant
Channels control mode	Independent control
Data acquisition method	Kelvin connection
Noise	<55dB
Database	MySQL
Communication	TCP/IP
Operating system	Windows 7/8/10 64bit
Data export	EXCEL, TXT, CSV, PDF, Plot/Graph
Min. disk drive	500GB
Communication port	Ethernet port
Leak Current	<5µA
Channels per unit	8
Operation and storage environment requirement	
Items	Values
Operation environment temperature	0°C~40°C (When the temperature is 25±10°C, the accuracy offset caused by temperature is less than 50ppm/°C)
Storage environment temperature	-10°C~50°C
Operation environment humidity	≤70% RH(no moisture condensation)
Storage environment humidity	≤80% RH(no moisture condensation)

NOTE: Please send us the quotations separately for Part-A and Part-B

Head of Procurement
Adichunchanagiri University
B G Nagara -571448