

Centre for Renewable Energy and Materials

Department of Chemistry Building

University of Kerala,

Kariavattom, Thiruvananthapuram-695581

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QUOTATION NOTICE

Competitive quotations are invited from reputed firms / manufactures for the supply, installation and commissioning of the following instruments / equipments as detailed below.

Tender Notification Date	: 23/01/2021
Last Date of Issuing Tender Document	: 08/02/2021
Last Date of Receiving Tender/Bid Closing	: 08/02/2021, 4.00 pm
Date and Time of Opening Tender	: 09/02/2021, 3.00 pm

Documents to be submitted: Data sheet of the items and Compliance statement, Details of warranty, Address and details of the firm, financial bid and any other relevant information.

Item No: 1

Ref. No. CREM/Eq/PUR/01/2021

Equipment Name: Source Meter

Quantity: 1 No.

Technical Specifications

- Current/Resistance/Voltage Measure,
- Current/Voltage Source, 20 W
- Source voltage range ± 200 mV to ± 20 V
- Source current range ± 1 μ A to ± 1 A
- 0.2 ohm to 200 ohm

Item No: 2

Ref. No. CREM/Eq/PUR/02/2021

Equipment Name: Temperature dependent Four probe Measurement system

Quantity: 1 No.

Technical Specifications

- PID controlled oven up to 200 °C
- Constant Current Source 0- 200 mA
- Low current source 0-200 μA
- DC microvoltmeter range from 1 mV to 10 V
- Four Probe Arrangement with Thermocouple sensor and suitable connectors for current source and voltage source

Item No: 3

Ref. No. CREM/Eq/PUR/03/2021

Equipment Name: Solar radiation meter

Quantity: 1 No.

Technical Specifications

- Spectral Range: 360 to 1120 nm
- Operating Environment: 0 to 50 C
- Calibration Uncertainty: ± 5 %
- Measurement Repeatability: < 1 %
- Response Time: < 1 ms
- Field of View: 180°
- Type: Pyranometer Meter

Item No: 4

Ref. No. CREM/Eq/PUR/04/2021

Equipment Name: Xenon arc lamp

Quantity: 1 No.

Technical Specifications

- 150 W

Item No: 5

Ref. No. CREM/Eq/PUR/05/2021

Equipment Name: Monochromator

Quantity: 1 No.

Technical Specifications

- ¼ meter focal length

Item No: 6

Ref. No. CREM/Eq/PUR/06/2021

Equipment Name: Diffraction grating

Quantity: 1 No.

Technical Specifications

- 10 nm resolution

Item No: 7

Ref. No. CREM/Eq/PUR/07/2021

Equipment Name: Wavelength Selector Software for monochromator

Quantity: 1 No.

Technical Specifications

- USB interface
- Acquisition system integrated

Item No: 8

Ref. No. CREM/Eq/PUR/08/2021

Equipment Name: Potentiostat galvanostat

Quantity: 1 No.

Technical Specifications

- Multi-channel electrochemical workstation
- Range up to 1 MHz,
- Current range from 1 A down to 10 µA,
- Software control

- Standard Test cell-3 sets
- Standard electrode- 3 sets
- Data acquisition control and transfer system

Item No: 9

Ref. No. CREM/Eq/PUR/09/2021

Equipment Name: Ion selective electrode meter and electrodes

Quantity: 1 No.

Technical Specifications

- ISE meter resolution: 3 digits 0.01; 0.1; 1; 10 concentration
- ISE meter accuracy: $\pm 0.5\%$ of reading (monovalent ions), $\pm 1\%$ of reading (divalent ions)
- Temperature Range: -20.0 to 120.0°C
- Copper ISE with measurement range 0.0006 to 6,400 mg/l
- Lead ISE with measurement range 0.2 to 20,000 mg/l

Item No: 10

Ref. No. CREM/Eq/PUR/10/2021

Equipment Name: LCR meter

Quantity: 1 No.

Technical Specifications

- Inductance range: 20 μH , 200 μH , 2000.0 μH , 20.0000mH, 200.00mH with basic accuracy of $\pm(0.5\% \text{rdg} + 5 \text{ digits})$, and 2000.0H, 20.000H, 200.00H, 2000.0H with basic accuracy of (DF <0.1).
- Capacitance range: 20pF, 200pF, 2000pF, 20.000nF, 200.00nF, 2000.0nF with basic accuracy of $\pm(0.5\% \text{rdg} + 5 \text{ digits})$, and 20.000 μF , 200.00 μF , 2.0000mF, 20.00mF with basic accuracy of (DF <0.1).
- Resistance range: 20.00 Ω , 200.00 Ω , 2.0000k Ω , 20.000k Ω , 200.00k Ω , 2.0000M Ω , 20.000M Ω , 200.0M Ω with basic accuracy of $\pm(0.5\% \text{rdg} + 5 \text{ digits})$.
- Q : 0.000 to 1999
- Phase: $\pm 90^{\circ}$

Item No: 11

Ref. No. CREM/Eq/PUR/11/2021

Equipment Name: Digital Vernier calliper and micrometre combo

Quantity: 1 No.

Technical Specifications

- Vernier calliper with Resolution: 0.01mm or .0005"/0.01mm
- Repeatability: 0.01mm / .0005"
- Display: LCD
- Micrometer with resolution: 0.001mm or 0.00005
- LC: 0.001 mm
- Range: 0-25 mm
- Accuracy: 0.001

Item No: 12

Ref. No. CREM/Eq/PUR/12/2021

Equipment Name: DC power source

Quantity: 1 No.

Technical Specifications

- 0-40V/0-180A
- Line regulation Voltage 0.5% and Current 0.5%
- Load regulation Voltage 0.5% and Current 0.5%
- Meter accuracy Voltage 0.2% \pm 3 counts and Current 0.2% \pm 3 counts
- Output noise (90-20MHz)

Item No: 13

Ref. No. CREM/Eq/PUR/13/2021

Equipment Name: Programmable DC power source

Quantity: 1 No.

Technical Specifications

- 0 to 35 V/2.2 A or better

- Load and Line Regulation \pm (% of output + offset)
- Voltage $< 0.01\% + 3 \text{ mV}$
- Current $< 0.01\% + 250 \mu\text{A}$
- Normal Mode Voltage $< 5 \text{ mVpp}/0.5 \text{ mVrms}$ or better
- Normal Mode Current $< 4 \text{ mArms}$ Common Mode Current $< 1.5 \mu\text{Arms}$
- Programming Voltage $< 0.05\% + 10 \text{ mV}$
- Current $< 0.2\% + 10 \text{ mA}$
- Transient Response Less than $50 \mu\text{sec}$ for output to recover to within 15 mV following a change in output current from full load to half load or vice versa.
- Settling Time $< 90 \text{ msec}$
- Capability for generating sine, triangle, square, saw tooth waves

Item No: 14

Ref. No. CREM/Eq/PUR/14/2021

Equipment Name: Pedal operated metal shear

Quantity: 1 No.

Technical Specifications

- Max Shear Width: 300mm

Item No: 15

Ref. No. CREM/Eq/PUR/15/2021

Equipment Name: Polypropylene pump

Quantity: 1 No.

Technical Specifications

- Pressure 50psi
- LPM 60

Item No: 16

Ref. No. CREM/Eq/PUR/16/2021

Equipment Name: Polypropylene pump

Quantity: 1 No.

Technical Specifications

- Pressure 46psi
- LPM 60

Item No: 17

Ref. No. CREM/Eq/PUR/17/2021

Equipment Name: Polypropylene pump

Quantity: 1 No.

Technical Specifications

- Pressure 42psi
- LPM 60

Tender Inviting Authority: Director, Centre for Renewable Energy and Materials, University of Kerala, Kariavattom Campus, Thiruvananthapuram, Kerala-695581.

Terms and Conditions

1. Incomplete & conditional quotations and quotations received after the due date will be summarily rejected without assigning any reasons thereof.
2. The Bidder shall quote the price in clear terms and the specification of products. The rates quoted must be inclusive of all taxes, cost of supply at the site, warranty and installation charges etc.
3. The price should be quoted only in Indian rupees. The bid shall be typed and signed by the bidder.
4. All the documents mentioned above shall be submitted without fail.
5. **Validity:** The Bid will be valid for 90 days from its date of opening. Further extension can be done by mutual consent.

6. **Delivery:** The item should be delivered at the Centre for Renewable Energy and Materials, University of Kerala, Kariavattom Campus.

7. **Installation and commissioning:** The items shall be installed and commissioned at the Centre for Renewable Energy and Materials, University of Kerala, Kariavattom Campus. All incidental expenses should be borne by the supplier.

8. **Payment:** The University will release the payment only after inspecting the equipment and satisfy that the supply is as per the requirements. The payment will be made after successful completion of the supply and producing invoice in duplicate.

9. **Warranty/Guarantee:** The supplier shall guarantee to repair/replace the items or its part – if found defective within the warranty period. The entire expenditure for repair/ replace of the item in this regard shall be borne by the supplier.

10. **Service facility:** Supplier should mention their details of service setup and manpower in Trivandrum who are responsible for after sales service.

11. In case of the dispute arises, the decision of University authority shall be final and binding on bidders.

12. The undersigned reserves the right to reject or accept any or all the tenders received fully or partly without assigning any reason thereof.

13. General rules relating to the purchase of materials/equipment will also applicable to this tender.

14. Those who are interested should send their bid in a sealed cover superscribed with “**Quotation for Ref. No: (.....) Equipment Name: (.....)**” and addressed to The Director, Centre for Renewable Energy and Materials, Department of Chemistry Building, University of Kerala, Kariavattom Campus, 695581, Thiruvananthapuram, Kerala.

15. Those firms who are interested to quote more than one instrument should sent individual quotations for each item separately.

16. The bids shall be opened at the office of the Director, Centre for Renewable Energy and Materials, University of Kerala, Kariavattom Campus on the Date mentioned above. If the above date of opening tender happens to be on a holiday or due to any other valid reason, the tender opening process will be done on the next working day or the day fixed by the undersigned.

Sd/

Hon. Director

Centre for Renewable Energy and Materials

University of Kerala