

COLLEGE OF ENGINEERING TRIVANDRUM
Thiruvananthapuram -16

NOTICE INVITING TENDER

No. CET/885/2025-P5

22-12-2025

Tender ID	: 2025_DTE_821180_1
Tender No	: 51/P5/MaterialLab/2025/CET
Superscription	: Purchase of Equipments/Instruments for Material Development and Integration Lab
Last date and time of receipt of tender on the website (www.etenders.kerala.gov.in)	: 01/01/2026 3:00 pm
Date and time of opening of tender	: 03/01/2026 3:00 pm
Date up to which the rates are to be firm	: 01/06/2026
Tender Cost	: 2360/- including 18% GST (2000 should be paid to our department and 18% GST of 360/- to GST dept directly)
EMD required	: 9923/-

Address of the Officer

THE PRINCIPAL, COLLEGE OF ENGINEERING TRIVANDRUM,
THIRUVANANTHAPURAM-695016, KERALA

Details

Sl. No	Item Description	Qty
1	High Speed Stirrer with Hot Plate	1 No
2	Vacuum Oven RVO-50 with Oil-Free Pump	1 No
3	Probe Sonicator	1 No
4	Analytical Balance – 0.1 mg accuracy	1 No
5	Planetary Ball Mill (2-station, SS/ZrO ₂ jars)	1 No
6	Tube Furnace (1000–1200°C, Quartz Tube, PID Controller)	1 No
7	Table-top Ductless Fume Hood (2–3 ft, carbon filter)	1 No
8	Magnetic Stirrer with Hot Plate	1 No
9	Oil-Free Diaphragm Vacuum Pump (≥20 L/min)	1 No

10	Laboratory Desiccator (Glass/Polycarbonate)	1 No
11	Glassware & Accessories Kit	1 No

General conditions

1. The unit price, all other charges such as delivery, transporting, packing, shipping, loading and unloading charges etc, and GST must be shown separately and should be furnished unambiguously.
2. Payment: 100 % after successful supply, installation, and satisfactory performance.
3. Agreement and tender form should be uploaded.
4. 5% security deposit along with agreement should be furnished in Rs.220/- Kerala Stamp Paper within a month/fortnight from the date of receipt of supply order.
5. Date of opening of tender : In case the proposed date declared as holiday, the tender will be opened on the next working day.
6. Only GST registered firms can participate in the Tender. GST number must be mentioned. The firm under composition scheme must mention the words "Composition taxable person" in their documents and should submit proof for that

Terms and Conditions

- The supplier must be an authorised dealer or manufacturer.
- Quoted prices must include GST, delivery, installation, and demonstration.
- Minimum 1-year comprehensive warranty is required.
- Delivery period: 6–8 weeks from purchase order.
- Payment after successful installation and testing.
- The user manual and compliance certificate must be provided.
- The purchaser reserves the right to accept or reject any tender.
- The purchaser has the right to cancel the tender at any stage of the tender .

Detailed technical specifications of items

1. High Speed Stirrer with Hot Plate

Model Requirement: Equivalent to *Remi 10 MLH Plus*

- Speed Range: **150 – 1500 RPM**
- Speed Control: **Digital with LCD display**
- Temperature Range: **Ambient to 550°C**
- Temperature Control: **Microprocessor PID-controlled**
- Top Plate Size: **184 × 184 mm**
- Top Plate Material: **Ceramic glass (chemical resistant)**
- Motor: **Brushless DC motor**
- Heating Power: **1000–1050 W**
- External Temperature Probe: **PT-100 / PT-1000**
- Safety:

- a. Over-temperature cut-off
- b. Residual heat warning
- Power Supply: **220–240 V AC, 50 Hz**

2. Vacuum Oven with Oil-Free Pump

Model Requirement: Equivalent to *Remi RVO-50 with OFD Pump*

- Temperature Range: **RT +10°C to 200°C**
- Temperature Resolution: **0.1°C**
- Temperature Stability: **±1°C**
- Volume/Chamber Size: **~50 liters**
- Inner Chamber Material: **Stainless Steel 304**
- Shelves: **2–3 adjustable aluminum shelves**
- Door: **Tempered double-layer glass window**
- Vacuum Level: **≤133 Pa (≈1.0 Torr)**
- Gasket: **Silicone high-temperature gasket**
- Vacuum Pump:
 - a. Type: **Oil-free diaphragm pump**
 - b. Flow Rate: **≥ 60 L/min**
 - c. Max Vacuum: **≥ 720–740 mm Hg**
 - Protection:
 - a. Over-temp alarm
 - b. Leakage protection
 - Power: **1.5–2 kW, 220–240 V AC**

3. Probe Sonicator

Model Requirement: Equivalent to *Labman PRO656*

- Display: **7-inch TFT Touchscreen**
- Power Output: **400–650 W adjustable**
- Frequency: **20–25 kHz (auto-tuned)**
- Amplitude Control: **0–100%**
- Horn/Probe: **Titanium alloy**
- Probe Diameter: **10–13 mm**
- Modes:
 - a. Pulse On/Off
 - b. Continuous mode
- Temperature Indicator: **Built-in**
- Sound-Proof Enclosure: **Yes**

- Safety Features:
 - a. Overload protection
 - b. Temperature shutdown
- Accessories:
 - a. Circulation glass beaker
 - b. Soundproof chamber light
 - c. UV sterilizer (optional)

4. Analytical Microbalance

Model Requirement: Equivalent to *Saffron SES 224C*

- Capacity: **220 g**
- Readability: **0.1 mg (0.0001 g)**
- Repeatability: **0.0002 g**
- Linearity: **±0.0003 g**
- Weighing Pan Diameter: **90 mm**
- Calibration: **Internal motorized calibration**
- Response Time: **≤ 3 sec**
- Draft Shield: **Three-door glass shield**
- Units: g, mg, ct, and others
- Display: **Backlit LCD**
- Operating Temp: **+5 to 35°C**
- Power: 220–240 V AC

5. Planetary Ball Mill

- No. of Grinding Stations: **2 or 4**
- Rotational Speed: **100–500 RPM adjustable**
- Jars:
 - a. Material: **SS 304 / Zirconia**
 - b. Capacity: **250–500 mL**
- Grinding Balls: **Stainless Steel/Zirconia**
- Features:
 - a. Reversible rotation
 - b. Programmable time cycles
 - c. Dynamic balancing
- Power: **1–2 kW**
- Safety:
 - a. Lid interlock
 - b. Thermal overload protection

6. Tube Furnace

- Maximum Temperature: **1000°C / 1200°C**
- Heating Zone Length: **200–300 mm**
- Tube Material: **Quartz tube (50–60 mm OD)**
- Temperature Controller: **PID programmable/digital**
- Heating Elements: **Kanthal/Nichrome coils**
- Temperature Accuracy: **±1°C**
- Gas Ports: **Inlet & outlet for N₂/Ar**
- Insulation: **Ceramic fibre**
- Safety:
 - a. Over-temp cutoff
 - b. Ground fault protection
- Power: **2–3 kW, 230 V AC**

7. Table-Top Ductless Fume Hood

- Type: **Ductless, Benchtop**
- Size: **2 ft / 3 ft**
- Filtration System:
 - a. Activated carbon filter (mandatory)
 - b. HEPA filter (optional)
- Face Velocity: **0.4–0.6 m/s**
- Sash: **Polycarbonate/Acrylic sliding front**
- Lighting: **LED internal light**
- Construction: **Chemical-resistant polypropylene**
- Noise Level: **<60 dB**
- Power: **230 V AC**

8. Magnetic Stirrer with Hot Plate

- Speed Range: **200–1500 RPM**
- Temperature: **Ambient to 350°C**
- Top Plate: **Ceramic-coated or stainless steel**
- Motor: **Brushless DC motor**
- Display: **Digital speed & temperature**
- Safety:
 - a. Overheat protection
 - b. Slip detection
- Power: **500–600 W**

9. Oil-Free Diaphragm Vacuum Pump

- Pump Type: **Oil-free diaphragm**
- Pumping Speed: **20–60 L/min**
- Ultimate Vacuum: **≤ 150 mbar**
- Head Material: **PTFE coated**
- Noise Level: **≤ 55 dB**
- Duty Cycle: **Continuous**
- Power: **150–250 W**
- Accessories: **Chemical-resistant tubing**

10. Desiccator (Laboratory Grade)

- Type: **Vacuum or non-vacuum desiccator**
- Body Material: **Polycarbonate / Borosilicate glass**
- Plate: **Porcelain perforated plate**
- Diameter: **250–300 mm**
- Desiccant: **Silica gel / Molecular sieve**
- Lid Seal: **Silicone O-ring**

11. Glassware & Accessories Set

- Borosilicate beakers (50–1000 mL)
- Conical flasks
- PTFE-coated magnetic stir bars (assorted)
- Pipettes & measuring cylinders
- Stainless steel spatulas
- Reagent bottles
- Funnels & glass rods

Digitally Approved by
K SURESH
PRL CET

The document is digitally approved. Hence signature is not needed.