



# Centre of Excellence in Solid State Physics



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## **TENDER NOTICE**

### **(Laboratory Equipment & Research Materials)**

Sealed proposals on Single Stage Single Envelope basis are hereby invited from the Manufacturers / Authorized Dealers having GST, Sales Tax Number, for the supply and installation of the following items on FOR basis as per specifications detailed in the tender documents.

#### **1. HEC Approved Double Entry Financial Software System**

#### **2. Raman Spectrophotometer (complete with cables power source etc.)**

Specifications:

- Detector cooled down to  $-35^{\circ}\text{C}$
- Spectral range (at least)  $200 - 3700 \text{ cm}^{-1}$
- Spectral resolution (at least)  $8.5 - 16 \text{ cm}^{-1}$
- Laser 532nm regulated up to 200mW

#### **3. Bridgman Crystal Growth Apparatus (complete with Rotary Pump and cables)**

Specifications:

- Tube length 250mm
- Maximum Temperature  $1800^{\circ}\text{C}$
- Variable pulling speed
- Vertical design with furnace at the top
- Vacuum tight flanges
- Water cooled shaft for pulling

#### **4. Hyperthermia Measurement System**

Specifications:

- Magnetic field should be tunable (0 – 400 Oe)
- Frequency should be variable or selectable (200, 300 and 400kHz)
- Should be water cooled
- Temperature readout should be included

#### **5. Tube Furnaces**

Specifications:

- Tube of 3-inch diameter
- Maximum temperature of 2000°C
- Tube length ~ 3 feet

#### **6. Multichannel Gas Flow Controllers**

Specifications:

- Gas flow range 0 – 100 SCCM
- Gas flow range 0 – 200 SCCM
- Control range 0 – 500 SCCM

#### **7. Target Materials**

Specifications:

- 2 inch and 3-inch diameter of the following materials Ni:Ti (99.5:0.5at%), ZnS (99.9%), ZnS:Fe (99:1at%), Ni<sub>2</sub>FeSi (99.9%), MgO (99.95%), Mg (99.95%), CoFe (99.9%), ITO (99:10at%), Ta<sub>2</sub>O<sub>5</sub> (99.99%), YBCO 123 (99.9%), ZnO (99.99%), Y<sub>2</sub>O<sub>3</sub> (99.99%), SiO<sub>2</sub> (99.999%), Cu (99.99%), Cr (99.95%), ZnS:Fe (99.1%:99.99%), ZrO<sub>2</sub> (99.95%)

#### **8. Evaporation Materials (wires or chunks)**

Specifications:

- High purity materials (CdS, CdTe, Al, Cu, Zn, Sn, In, Au, Ag, Se, Zr, Ga, CuS, Cu<sub>2</sub>S, Cr, Pt, etc.)

#### **9. Substrates**

ITO coated Glass, FTO coated glass, sapphire, alumina, silica, copper, silver, titanium

## **10. Evaporation filaments / sheets**

Tungsten, Molybdenum, Tantalum

## **11. Single Crystal Wafers**

Specifications:

- 3 inch dia. silicon p-type 100-oriented, resistivity 1-10 ohm-cm, single side polished
- 3 inch dia. silicon n-type 111-oriented, resistivity 1-10 ohm-cm, single side polished

## **12. Undergraduate Laboratory Equipment**

Specifications:

- Related to Mechanics
- Related to Waves & Optics
- Related to Heat & Thermodynamics
- Related to Electricity & Magnetism

Bids only through E-Pak Acquisition and disposal system (EPADS) will be entertained. No bid other than EPADS will be accepted. Bid security will be submitted before closing of tender physically in the Director's office, Quaid-e-Azam Campus, Lahore, (Tel: 042-99233133). Bidder will also upload the complete scanned copy of their bid in EPADS.

Bidding documents, containing detailed terms and conditions can be downloaded from the websites of PPRA or Punjab University ([www.pu.edu.pk](http://www.pu.edu.pk)). In case of any query, guidance can be sought from the director's office.

The bids prepared in accordance with the instructions contained in the bidding documents must be submitted on EPADS by 28-01-2025 till 11:00 (a.m.), which will be opened on the same date at 11:30 (a.m.). If there is a public holiday announced by the Government on the tender opening date, then the tender will be opened on the next working day.

**Director**

**COE in Solid State Physics**

**University of the Punjab, Lahore**