GHULAM ISHAQ KHAN INSTITUTE
OF ENGINEERING SCIENCES AND TECHNOLOGY

Tender documents

for

SUPPLY, INSTALLTION AND COMMSIONING
OF
"LABORATORY EQUIPMENT"

Tender No. GIKI/PD/E-613/17

3 January 2017

The Ghulam Ishaq Khan Institute (GIK) of Engineering Sciences and Technology, located at Topi, District Swabi is a seat of excellence in higher engineering education and research. Sealed bids are invited from reputed firms/suppliers for supply, installation, commission of laboratory equipment:

1. **Specification of items:**

   Detail specification of the item, for which rate is required are given at Annexure-A and B. Separate bids in separate envelope is requited for each annexure and Annexure B.

2. Date for submission of the quotation:

Bids in sealed envelopes, on prescribed tender documents should reach to the Procurement Department, GIK Institute Topi before 3:00 pm on 17 January 2017. Write our No. Tender No. GIKI/PD/E-613/17 on the top of the envelope. Open bids will not be accepted.

3. **Tender opening date and venue:**

   Tenders will be opened by the Procurement Committee in the presence of bidders at 3:30 pm on the same date (17 January 2017) in the Conference Room of H. U. Beg Administration Block, GIK Institute, Topi-23640, District Swabi, Khyber Pakhtunkhwa.

4. **Price / rate:**

   Please quote unit price for each item on **C&F Islamabad Airport** basis, inclusive of installation, commissioning and training at GIK Institute etc.

5. **Validity of the price:**

   Bids should remain valid for two months from the submission date of bids.

6. **Bid Security:**

   You are required to enclose the call deposit of 2% (refundable) through demand draft / pay order payable on account of GIK Institute, Topi with your bids document.

7. **Mode of Payment:**

   Payment will be made through letter of credit (L/C).

8. **Delivery period:**

   Please indicate the delivery time after placing the Purchase Order for each item.

9. **Penalty clause:**

   If you fail to supply the material in the above specified period, GIK Institute reserves the right to blacklist you for future business or forfeit the security money of 0.32% per day of the contract value or may impose any other financial penalty as deemed fit.

10. **Installation / Commission of the equipment/ Training:**

Equipment will be installed / commissioned by the trained engineer (s) of supplier / contractor at GIK Institute Topi, free of charge / are including in the cost. Free of cost tanning will be provide on side and two engineers at your official lab.

11. **Warranty:**

Minimum two years warranty is required for the equipment. Please indicate the warrantee period and terms & conditions of the warranty in the bids.

12 Please sign and stamp each page of the tender/bid document; otherwise, it will not be considered / accepted.

13. Bidders having minimum 3 years' experience of said work to the reputable organization/ institute/company etc are must.

14. Incomplete forms will not be acceptable and will not be considered in any case, and will be rejected.

15. Bids, will be accepted only, for the specifications given in the Tender (Annexure-A).

16. In case of any dispute the decision of the GIK Institute will be final and binding on you.

Annexure- A

S.#	Nano-indenter Tender Specifications	Qty
1	The nano-indenter must be capable of testing; ceramics, thin films, diamond like coatings, dielectric films, metals, polymers, semiconductor, Sol-Gel coatings, and biomaterials. The following are the features/functions that would be required in the equipment: **General terms and Conditions:** 1. The equipment should be installed by a foreign expert/ factory trained engineer at GIK Institute. 2. The offer should include the training of one person at OEM training site. **Technical Specifications Or Equivalent or Improved:** 3. Equipment should be capable of carrying out the following tests/analysis: • Scratch (Nano/micro) test • Nano wear • Surface Topography: Automatic positioning of indenter for 2-D and 3-D image analysis and surface profiling. In-situ scanning probe microscopy will be preferred. X-Y Cartesian scan range, 60 micron x 60 micron or better and furthermore Z-direction 4 micron or better. • Sample Stage Specification: X, Y Cartesian axes staging system with usable sample area in XY plane ≥ 100 mm X 100 mm. Z-direction travel: 50 mm or more. Positioning accuracy: 1 micron or less. • Modulus mapping • 3D measurement modes (force spectroscopy, mapping local conductivity with surface topography and elasticity imaging, lateral force during scratching and tribological tests) • Measuring C-V (conductivity- voltage) curves at predefined normal/load indentation penetration of the nano- indenter. • Displacement measurement: capacitive gauge • Displacement range: 80-100 microns or better • Displacement resolution (electronic): **0.04-0.06** nm or better • Typical noise less than **0.25** nm or better • Load application: coil/magnet • Maximum Load: 1-10 N • Load resolution: 6-10 nN • Typical indenter normal stiffness: 200-400 N/m or better • Combined system with both low and high load heads modes. • Force and displacement feedback control up to 70 kHz or better • Data acquisition rate up to 15 kHz or better • Preferably compliant to ISO 14577 and ASTM E2546 • The equipment should be provided with a PC (Core I7, 1TB hard disc, 12 GB RAM), laser printer, with Window 7 or above, in English. The software package, in English, for automated data acquisition, storage	1

	and evaluation. Instrument compliance and thermal drift corrections, tip calibration should be possible by the software supplied. Furthermore the software should be capable of multiple file analysis, including stress-strain curve calculation. • Two independent depth and load sensors: ultra-high resolution capacitive sensors for “True Depth” and “Load Control” modes. • Free of thermal drifts (drift rate of ≈ 1 ppm/°C or less) • The system must be capable of operating at 220 V/50 Hz. • The system provided should be capable of attachments such as Vacuum or environmental control enclosure, liquid cell, heating stage option. **Accessories:** Standard calibration (fused silica) block must be provided. Qty: 2 Surface scanning standard blocks for objective calibrations in non-contact mode: Qty: 10 Surface scanning tips in contact mode: Qty: 10 The following indenter tips must be provided. • Berkovich: Qty: 5 • Cube corner: Qty: 5 • Spherical indenter: 5 (10 microns, 50 microns, 100 microns, 150 microns, 200 microns, Qty: 1 each) • Vicker’s: Qty: 5 • List of spares and consumables for at least two years must be accompanied with the quotation.	

Annexure- B

S.#	Equipment for FEE	Qty
1	**BiSKIT Telecoms Experimenter ETT 101 (Make: Emona Australia)** **Or Equivalent** With standard accessories including: 20 x stackable patch cords, user manual experiment Vol 1 and Vol 2, manuals on CD-ROM, 3 x BNC-2mm scope leads, headphone and 12 VDC plug pack	5 units