IIT PALAKKAD

भारतीय प्रौद्योगिकी संस्थान पालक्काड
INDIAN INSTITUTE OF TECHNOLOGY PALAKKAD
अहलिआ एकीकृत कैम्पस, कोज़्हिपारा
Ahalia Integrated Campus, Kozhipara
पालक्काड- 678 557
Palakkad- 678 557

दूरभाषसंख्या Phone no: 04923 – 226 590/586

ईमेल Email : purchase@iitpkd.ac.in

Ref no: IITPKD/CIF/KESA/090/2017 Date : 08.01.2018

CORRIGENDUM

Due Date of the Tender : 18.01.2018 at 3 PM

Technicla bid opening : The Technical Bid will be opened on 18.01.2018 at 3.00 PM in Academic Block, IIT Palakkad

Corrigendum for Ref No: IITPKD/CIF/KESA/090/2017

- CIP Cochin airport, insurance to be covered by the vendor from warehouse to IIT Palakkad warehouse.
- **It is mandatory to quote for EBSD, Lithography and WDS. Price for each should be quoted separately. Decision on including these for price bid comparison will be taken before opening price bid.**
- Items quoted for EDS, EBSD, WDS and Lithography must conform to the technical specifications listed below in this document.

Changes for modular accessories

- Item (1-3) - Plasma cleaning and Etching unit, Sputter coating facility and Benchtop sample storage facility- all items are mandatory and should be quoted.
- Item (4) - Cryo ultramicrotome facility + Cryostorage - optional

Changes for Technical Specifications

- Resolution : 0.8 nm (or better) at 15 kV
  1.3 nm (or better) at 1.0 kV
- Working distance : 1 mm or less to 40 mm or more
- Magnification : 25X (or lesser) to 1000000X (or greater)
- 5X motorised stage eucentric stage : Movements X/Y >100 mm Z = 40 mm or more with joystick control
- Multiple hole aperture with compensated alignment dependent on probe current settings

Specifications for EDS :

- Energy resolution 124 – 129 eV MnK; Sensor area 30mm^2 or larger

- Liquid Nitrogen-free with integrated Peltier cooling system
- Quantification of the element starting with Boron.
- Software- easy to use interface that ensures ideal data collection, analysis and reporting for users of all levels, spectra comparison including normalize, add, subtract and multiply functions, ability to build a linescan from collected maps. Spectra can be extracted from collected maps using points, area, and free hand draw.

Specifications for WDS

- Optimized to cover low atomic number elements of Be to S. System to support high performance for C.
- Software - Fully automated focusing routine that provides complete microscope optimization for WDS analysis. The user simply selects an element or energy range and is able to proceed to solve an EDS peak overlap without focusing the optic.

Specifications for EBSD

- Feature to be included are color maps for microstructure, numerical representations of the measured microstructure with statistical information, visualization of measured orientation and misorientation distributions. Analysis for Advanced Grain, Texture, Boundary.
- Orientation display analysis for pole figure and inverse pole figure must be supported.
- Data capture: up to 1000 indexed points/sec.

Specification for Electron Beam lithography:

- Beam Blanker - The Electro-static beam blanker having rise time 30 ns or less should be placed directly under the acceleration anode. This should work at 1 MHz repetition frequency in continuous operation.
- Pattern Generator - Software controlled scan generation should be based on digital pattern generator for lithography with the following specifications: Lithography digital pattern generator should be of real time, high speed with digital signal processor of 400 MHz (or more) and 1MB (or more) static cache memory. The pattern generator should have synchronized control of electrostatic beam blanker unit. Vector scan as standard but capable of bitmap/raster scan for exposing arbitrarily shaped single pixel lines and dots, circular exposure mode for circles and rings, shapes of individual patterns, rectangles, triangles, any polygons of any orientation and shape, alphanumerical text, Shapes generated by mathematical functions.
- Writing field size range : From 0.5 μm up to 2 mm field size should be possible.
- Dose control : Dose for each individual element should vary using a dwell time factor ranging from 0.001 (or less) up to 100000 (or more) . Minimum dwell time should be 50 ns or less while maximum dwell time as 8 sec or more with increment of 1 ns or less.
- Writing speed : It should be in the range of 0.125 Hz to 20 MHz
- Required software for pattern design and system execution must be provided.

Training

Training must be provided by factory-trained engineers at free of cost at IIT Palakkad to the institute assigned staff/students at least for two weeks. Training will include basic knowledge about the installation of the equipment, troubleshooting and operation of the system with accessories quoted using various samples.

REGISTRAR, IIT PALAKKAD