
Indian Institute of Technology, Kharagpur, an Institute of National Importance invites sealed bids from reputed manufacturer or their authorised Distributor/Dealer (foreign firms or their Indian Representative company) who have adequate credential for supply/installation of High Resolution Cryo-Analytical 200 keV Field Emission Gun Transmission Electron Microscope with accessories as per Annexure – I for the Central Research Facility, Indian Institute of Technology, Kharagpur, India. High Resolution Cryo-Analytical 200 keV Field Emission Gun Transmission Electron Microscope with accessories is required for dedicated use in relevant UG and PG laboratory courses and research purposes.

Interested parties may submit their sealed bids under Two-Bid system as per Technical Specifications given at Annexure I, and General Terms & Conditions and Special instructions given at Annexure II and Annexure III. Bidders are required to submit their Details in the format given at Annexure IV along with their technical bids. They are also required to submit a signed Declaration in format given at Annexure V. A Checklist and Compliance statement against each item of Annexure I-III thereon severally and individually shall also be submitted. Kindly refer to the Institute website www.iitkgp.ac.in [link: Tenders] for complete tender details.

The tender be sent in a sealed packet, containing two separate sealed envelopes (one each for Technical Bid and Price Bid) along with prescribed tender fee and Earnest Money Deposit (EMD) duly superscribed with Tender Notice No IIT/KGP/S&P/CA-HRTEM/2014-15 Date: 22-05-2015, to the Office of the Central Research Facility, Indian Institute of Technology Kharagpur, P.O. Kharagpur Technology, PIN 721302, West Bengal, India on or before 03-07-2015 by 11.30 a.m.

For any query pertaining to this bid document, communication be address to Central Research Facility, Indian Institute of Technology Kharagpur-721302 [Ph: 913222-282480].

The technical bid will be evaluated first and price bids will be opened in respect of those OEMs/Vendors, who are found technically qualified after evaluation of Technical bids.

The Technical bids will be opened on 03.07.2015 at 3.30 p.m. in Office of Chairman, Central Research Facility, Indian Institute of Technology Kharagpur-721302.

Chairman Central Research Facility
FOR DIRECTOR IIT, KHRAGPUR

Copy to: 1. Institute website, 2. Notice Board
3. Indian Embassies, USA/UK/Germany/France/Austria/Belgium/Netherlands
Indian Institute of Technology, Kharagpur  
Central Research Facility

**Specifications for High Resolution Cryo-Analytical 200 keV Field Emission Gun Transmission Electron Microscope with accessories**

**High Resolution Cryo-Analytical 200 keV Field Emission Gun Transmission Electron Microscope with accessories**

The Central Research Facility wishes to procure a high resolution analytical transmission electron microscope with options for operation at cryogenic and elevated temperatures for study of a wide variety of samples, which could be metallic, ceramic, semiconductor, polymer, rubber, emulsion/gel (frozen condition) and biological type. The facility will be used for imaging in bright field and dark field modes, record selected area electron diffraction (SAED) and convergent beam electron diffraction (CBED) patterns. The facility will be capable of carrying out chemical analysis using energy dispersive spectroscopy (EDS). The facility should also be equipped with scanning transmission electron microscopy (STEM) bright/dark field and high angle annular dark field (HAADF) detectors for Z-contrast imaging. STEM may be used also for both CBED analysis and EDS elemental mapping.

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<tr>
<th>Sl. No.</th>
<th>Particulars</th>
<th>Required specifications</th>
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<tr>
<td>2.</td>
<td>Accelerating voltage</td>
<td>Minimum of 80 kV to maximum of 200 kV (variable either in steps or continuous)</td>
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<td>3.</td>
<td>Electron gun</td>
<td>Filament Type: Schottky Field Emission Gun (such as ZrO/W(100) with energy resolution ( \leq 0.8 ) eV. Should be guaranteed for 1 year or more. Price may be quoted for additional guarantee period, if applicable. Electron gun lens may be electrostatic in nature.</td>
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</table>
| 4.      | Possible types of operating modes | (a) TEM (Bright field and dark field)  
(b) Atomic resolution imaging (wherever applicable)  
(c) Micro-probe and Nano-probe  
(d) Annular Bright field imaging  
(e) Annular and High Angle Annular Dark field imaging  
(f) Selected area diffraction including micro- and nano diffraction  
(g) Convergent Beam Electron Diffraction (with maximum convergence angle \( >100 \) mrad) using TEM/STEM modes  
(h) EDS using TEM/STEM modes  
(i) CRYO – TEM with using Cryo holder and accessories.  
(j) In-situ heating experiments up to 1000 °C or, more with double-tilt specimen stage. In-situ heating up to |
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<td></td>
<td>≥1200°C with single-tilt specimen stage.</td>
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<td>(k) In-situ tensile straining experiments</td>
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<td>System should have capability of simultaneous analysis modes such as: STEM + EDS, STEM +</td>
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<td>Image recording, Cryo + EDS, wherever possible.</td>
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<td>5.</td>
<td>Resolution</td>
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<td>TEM/HRTEM: Point-to-point resolution ≤0.25 nm and lattice resolution ≤0.14 nm with</td>
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<td>high resolution pole piece and compatible with EDS system and Cryo-system.</td>
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<td>STEM resolution: 1.0 nm</td>
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<td>STEM HAADF resolution: ≤0.20 nm</td>
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<td>6.</td>
<td>Magnification for imaging</td>
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<td>≤50X to ≥1,200,000X (or higher range of magnification).</td>
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<td>7.</td>
<td>Camera Length for Diffraction</td>
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<td>≤80 mm to ≥1500 mm</td>
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<td>8.</td>
<td>Vacuum System</td>
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<td>Clean ultrahigh dry differential pumping system. The system should have sufficient</td>
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<td>number of Oil-free Ion Getter Pumps/Sputter Ion Pumps for Column, Gun and Specimen</td>
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<td>chamber. Suitable vacuum pump for Camera Section should be provided. Fully automatic</td>
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<td>sequential control for operation of vacuum pumps. Built-in automatic control of bake-out</td>
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<td>system. FEG gun area vacuum should have pressure ≤1X10⁻⁷ Pa and TEM column area vacuum</td>
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<td>should be about better than 10⁻⁵ Pa.</td>
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<td>9.</td>
<td>Lens System</td>
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<td>Image rotation-free lens system at least within 10,000x - 450,000x or higher.</td>
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<td>At least two condenser lenses.</td>
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<td>Condenser aperture: Manual mode operation of aperture is preferred. Built-in motor driven</td>
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<td>aperture shaft may be offered as alternative option, if manual mode is not available.</td>
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<td>Objective lens with upper and lower pole pieces (double objective lens with objective</td>
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<td>lens and objective mini-lens may be quoted as option).</td>
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<td>Variable objective lens aperture (≥3 sizes may be provided). Manual mode operation of</td>
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<td></td>
<td>aperture is preferred. Built-in motor driven aperture shaft may be offered as alternative</td>
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<td>option, if manual mode is not available.</td>
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<td>Objective lens stigmator: Built-in circuit with centering on the basis of electromagnetism</td>
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<td>Intermediate lens</td>
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<td>Projector lens</td>
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<td>Distortion and rotation free images.</td>
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<td>Selected area/field limiting aperture: At least 3 diameters should be made available.</td>
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<td>Manual and/or motorized operations may be quoted as options.</td>
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<td>Spherical Aberration of objective lens ≤ 1.2 mm</td>
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<td>Chromatic Aberration of objective lens ≤ 1.4 mm</td>
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<td>10.</td>
<td>STEM</td>
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<td>Scanning transmission electron microscope with HAADF detector:</td>
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On-axis retractable STEM bright field, annular bright-field and dark field, as well as high angle annular dark field (HAADF) detectors supplied with software for data acquisition and analysis. Imaging in Z (atomic number) contrast mode should be possible.

- STEM bright field image resolution: ≤ 0.2 nm
- STEM HAADF resolution: ≤ 0.2 nm
- Convergence angle ≥ 50 mRad (for HAADF Detector)
- STEM image magnification ≥5,000,000 times.

Drift correction facility should be provided for STEM to facilitate long duration acquisition of characteristic X-rays from a given area of a sample for the purpose of elemental mapping.

| 11. Specimen Holders | Low-background Single tilt holder : 1 No.  
| | Low background double tilt holder: 1 No. 
| | Regular double tilt holder: 1 No. 
| | Double-Tilt heating holder up to 1000 °C:1 No.  
| | Single-Tilt heating holder up to ≥1200 °C: 1 No. (optional) 
| | Double tilt In-situ Straining Holder: 1 No. 
| | Single tilt Cryo-Holder (temperature down to -170 °C): 1 No. with necessary liquid nitrogen pumping station and related essential accessories 
| | Single-tilt multi-specimen holder (optional) |

| 12. Facilities for Cryo-TEM | Cryo-transfer station with necessary accessories  
| | Cryo-fins or equivalent device as part of pole pieces  
| | Anti-contamination device (ACD ) or equivalent facility  
| | Cryo-plunger  
| | Cryo-freeze or Cryo-sample drying facility  
| | Dry pumping facility for cryo-holder.  
| | Minimum / Low Dose imaging and system control software |

| 13. Specimen Chamber | Goniometer stage should accept variety of specimen holder including heating, cooling, and low background double tilt holder.  
| | Goniometer should be motor-driven, eucentric, side entry type with Z-movement being fine-controlled.  
| | A piezoelectric drive system for shifting of field view at high-resolution magnification with a drift-free / backlash-free control unit and a suitable drive-control power supply may be offered as optional feature.  
| | Tilt angles should be ± 30° or more with motorized specimen tilting about two perpendicular axes for crystallographic analysis.  
| | Maximum tilt for tomography application should be ± 70° or more  
| | The permissible tilt may vary with type of holder used.  
<p>| | X-Y movement: ≥ ±1 mm, motor driven (manual or computer controlled with specimen position recall facility) |</p>
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<td>Z movement ( \geq \pm 0.2 \text{ mm, motor driven for specimen height adjustment.} \ Image fine shift: Electromagnetic shift mechanism for X-Y translation. \ Facility for recording specific specimen translation position as reference point in the memory.</td>
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<td>14. Automation</td>
<td>It should be possible to align both electron gun and beam at selected acceleration voltages, save it in the computer, and recall that for automatic alignment while switching from one acceleration voltage to another. This should be possible for at least 3 selected acceleration voltages or more, such as 80 kV, 120 kV, and 200 kV.</td>
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<td>15. Energy Dispersive Spectroscopy Facility</td>
<td>Energy dispersive X-ray spectrometer integrated with basic TEM unit: \ The EDS data acquisition and analysis software should have the following features: \ Liquid nitrogen free Peltier-cooled high resolution, high speed silicon drift detector (SDD): at least 1 No. \ Net/total active area of detector/detectors: 100 mm(^2) or more with solid angle of ( \geq 0.9 \text{ Sr.} ) \ The detector should have an ultra-thin window for excellent light element performance and capability to detect from B to U. Windowless EDS detector will be also acceptable, if that with ultra-thin window cannot be offered/not available. \ If two types of detectors are provided as options, individual prices should be quoted separately. \ The detector should be fully retractable, whenever required. \ Resolution: 136 eV or better at Mn K(\alpha) and carbon resolution 50 eV in compliance with ISO 15632:2012 specifications and guaranteed on site. \ The EDS should be capable of single point analysis, multipoint analysis, selective element mapping, line scan, selected area analysis, qualitative and quantitative analysis (with ZAF correction). \ The EDS software should have features like peak auto identification routine, spectral match analysis, automatic background subtraction, spectrum processing using filters, least square fitting and peak de-convolution. Pile up correction and background noise reduction, simultaneous imaging and analysis should be possible. \ The calibration standards for EDS should be provided. The supplier should arrange for seamless interfacing, software, installation and commission for EDS.</td>
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<td>16 3D Tomography (Optional)</td>
<td>Facility for 3D tomography may be quoted as option. This option should include 3D Tomography specimen holder, relevant softwares for automatic acquisition and montage of images in TEM and STEM modes of operation, along with 3D reconstruction. It should also be applicable to EDS to obtain 3D distribution of elements.</td>
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<td>17. Secondary</td>
<td>A secondary electron detector may be included for imaging</td>
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| **18. Electron Energy Loss Spectroscopy Facility with Energy Filtering (Optional)** | Prices of both Options A and B should be quoted separately.  
**Option A:**  
Energy resolution for zero loss peak should be 0.25 eV FWHM  
Maximum distortion = 1.5%  
Elemental mapping in STEM mode should be possible with spectral acquisition rate of at least 1000 /s.  
Should have electrostatic shutter  
Advanced Bright field/Dark Field STEM Detector (Optional item in Option A: Price may be quoted separately).  
**Option B:**  
Should have electrostatic shutter  
Energy resolution for zero loss peak should be 0.1 eV FWHM.  
Maximum distortion = 0.75%  
Should have integrated bright field and dark field detectors  
Elemental mapping in STEM mode should be possible with spectral acquisition rate of at least 1000 /s. |
| **19. Calibration standards** | Standard samples to check system calibration i.e., magnification and camera length should be supplied along with the system. |
| **20. Output Recording System** | Complementary metal-oxide semiconductor (CMOS): High resolution CMOS Camera of minimum 4K x 4K pixel full frame CCD with near 100 % fill factor.  
Should have CMOS sensor with built-in shutter. Sensor active area should be $\geq 3720 \text{ mm}^2$, and pixel size $\approx 15 \text{ micrometers}$. Full sensor read out speed should be $\geq 25 \text{ fps}$.  
Fully EELS compatible & retractable. This should be capable of TV viewing also.  
Recording modes should include both “image” and “video”.  
Ability to view “live” video of in-situ TEM experiments at resolution of 4096 X 4096 pixels at 25 frames per second (fps) to 512 X 512 pixels at $\geq 300 \text{ fps}$, with usage of the In Situ upgrade option and with suitable high end server type PC configuration.  
It should be possible to do in-line data processing with real time drift correction at 25 fps.  
User-friendly software facility for astigmatism correction at high magnification for HRTEM imaging  
Output images should be compatible with other commercial image analysis software  
On–line annotation for scale bar, magnification and TEM condition should be available  
On-image facility for linear measurement as diffraction measurements for ring and spot pattern |
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<td><strong>Real-time FFT with spatial and temporal filtering</strong></td>
<td>Camera should be High resolution scintillation type having digitization more than 16 bit with frame accumulation. The Camera should allow selection of viewing mode integration time as read out area. The software should include online and offline data processing features like FFT and full support for real space (image mode) and reciprocal space (different mode) calibrations.</td>
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<tr>
<td><strong>Crystallographic and HREM image simulation software</strong></td>
<td>Software for analysis of selected area electron diffraction patterns (ring and spot patterns) with measurement of spacings between spots and angle between reciprocal lattice vectors, Kikuchi pattern analysis, as well as unit cell determination. It should be possible to index spots and find the zone-axis of diffraction patterns. The software should be capable of simulating diffraction patterns for different zone-axis orientations of crystals with various structures. Software for HREM (atomic resolution) image simulation should also be provided. Five (5 nos.) off-line licenses of the softwares should be provided.</td>
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<td><strong>Provision for future upgradability</strong></td>
<td>It should be possible to upgrade the system by addition of facilities like EELS and 3D Tomography in future.</td>
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<td><strong>Tool kit</strong></td>
<td>Suitable and essential tool kit is to be supplied with the system for the required maintenance.</td>
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<td><strong>Spares and accessories</strong></td>
<td>All essential spares should be included in the offer. The spares should include emitter (1 No.), two sets of all O-rings, one set of all kinds of valves, a set of screws used in different specimen holders, and all types of consumables.</td>
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<td><strong>Chiller and Compressor</strong></td>
<td>Suitable compressor and chiller for the main equipment should be supplied along with the TEM system. Close circuit, automatic temperature and flow rate controlled chiller.</td>
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<tr>
<td><strong>Display and output</strong></td>
<td>19” or larger TFT monitor(s) for HRTEM operation, image recording/processing, and EDS analyses. Color Laser Printer (1 No.) should be provided.</td>
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<tr>
<td><strong>CPU and software</strong></td>
<td>Latest compatible branded high speed computer (dual core processor or higher version) with pre-loaded licensed software for Cryo-Analytical HRTEM operating parameters. Specify computer speed, processor, RAM and graphics card. All the computers for HRTEM must be imported/factory fitted and tested with pre-loaded softwares for operating these systems. All softwares used to operate the instrument, acquire and process the data should be licensed and should be factory preloaded.</td>
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| **Safety Devices** | The Cryo-Analytical HRTEM should be equipped with self-
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<td>diagnostic functions to detect problems like pneumatic pressure abnormality, cooling water temperature abnormality, reservoir tank pressure abnormality, etc.</td>
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<td>29.</td>
<td><strong>Uniterrupted Power Supply (UPS)</strong></td>
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<td>On-line Uniterrupted Power Supply (UPS) system should be supplied for HRTEM and Chiller. The UPS should be able to keep the TEM operational in case of sudden power cut or spike and support the complete TEM system with all accessories with full load for duration of 1 hour. There should be 3 years on-site comprehensive warranty for UPS, and 2 years onsite replacement warranty for batteries from the date of installation.</td>
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<td>30.</td>
<td><strong>Pre-installation requirements</strong></td>
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<td>Pre-installation requirements such as room size, tolerable limits of electromagnetic field and vibration (mechanical), required power rating, utility requirements are to be stated clearly, and to be verified/surveyed by the supplier at the installation site. It is the supplier’s responsibility to clearly provide details of the above mentioned requirements before 120 days of delivery of the equipment.</td>
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<td>31.</td>
<td><strong>Environmental requirements</strong></td>
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<td>Necessary environmental requirements, i.e., temperature, humidity, vibration isolation, stray magnetic field, electrical connections/earthing requirement, etc during the operation of Cryo-Analytical HRTEM should be specified clearly.</td>
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<td>32.</td>
<td><strong>Installation and commissioning</strong></td>
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<td>The manufacturer should undertake to install and commission the equipment and all attachments accessories and also demonstrate the performance guaranteed as per specifications at site.</td>
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<td>33.</td>
<td><strong>Warranty, Training and Service Support</strong></td>
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<td>On-site training should be provided to the operators. Necessary documents, operational &amp; system manual in the form of CD and hardcopy must be supplied with the system. Three years comprehensive on-site warranty should be offered for entire offered configuration (after successful commissioning of the equipment). Service response time, turn-around time &amp; up-time of the equipment should be clearly specified. Service response time must be less than 72 hours. The Cryo-analytical HRTEM must have provision for on-line diagnosis of faults. Suitable service facility for computer hardware or software related problems should also be provided. Upgradation of the software has to be supplied free of cost as and when it is upgraded within 10 years of microscope supply. The spare parts should be available up to 10 years from the date of installation.</td>
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<td>34.</td>
<td><strong>Compliance Statement</strong></td>
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<td>The supplier must submit a table indicating the compliance of the features of the model of the equipment being quoted with those given in the indent. Features not matching – must be clearly indicated. Additional features and features in the quoted equipment which are better than those in the indent – may be clearly...</td>
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The supplier must submit technical brochures and proper application notes adequately explaining and confirming the availability of the features in the model of the equipment being quoted.

| 35. | **Required Documents along with technical specifications** | The supplier must provide a comprehensive list of users of HRTEM (Schottky Field Emission type) in India. They should also submit the name(s) of the service engineer(s) employed by them who is/are competent to service the equipment along with their locations in India. |
| 36. | **Terms and conditions** | (a) The Institute may opt for single order or split-order depending on the configuration offered by the vendor. For items manufactured by third party, the vendor should provide authorization to quote from the original manufacturer. In case of split order, the vendor offering the HRTEM has to take complete responsibility of arranging the installation and commissioning of all parts.  
(b) The following documents are required from the Indian agents of Foreign Firms in line with the Rule 143 of GFR 2005 and CVC instruction and one circular dated 17.09.2009 of DG S & D, New Delhi: (i) Foreign Principal's Proforma Invoice/declaration on letter head indicating the commission payable to the Indian Agent, nature of after sales service to be rendered by the Indian Agent. (ii) Copy of the agency agreement with the foreign principal and the precise relationship between them and their mutual interest in the business. (iii) The enlistment certificate of the Indian Agent with the Director General of Supplies & Disposals (DGS&D) under the Compulsory Registration Scheme of Ministry of Finance.  
(c) Price break up for individual items should be provided in the price-bid. The prices of all optional items should be quoted separately.  
(d) The firm has to guarantee technical support for the entire system and supply of spares for a minimum period of 10 years from the date of installation.  
(e) Provision for on-line remote diagnosis of faults.  
(f) Firm must have proven knowledge and expertise in standard system installation, commissioning and providing training. Supporting documents evidencing the above must be enclosed. The firm must have at least 5 installations of Schottky Field Emission HRTEMs within India for desired experience of maintenance.  
(g) Free training on different applications to selected users.  
(h) Complaints regarding functioning of the instrument should be responded to within 48 hours. Maintenance and service must be provided within 7 working days of the complaint.  
(i) Date of manufacturing of the equipment should be after the placement of order. |
|   | (j) Compliance of all listed specifications as well as terms and conditions should be indicated by the vendors in tabular form in separate sheets.  
|   | (k) Optional Item: The supplier may provide a highly skilled full time person with suitable expertise for providing technical assistance and routine maintenance of the proposed HRTEM for a period of 3-years from the date of installation of the system in the institute. The institute shall have no responsibility for his/her service liabilities. The expenses for such service may be quoted separately. |

**ANNEXURE – II**

**GENERAL TERMS AND CONDITIONS**

(1) **Last Date of Submission of Sealed Bids (both technical and price bids, separately):** 03-07-2015 up to 11:30 a.m.

The Technical bids will be opened on 03.07.2015 at 3.30 p.m. in the Office of the Central Research Facility, I.I.T. Kharagpur, India.

(2) **Payment Terms & Performance Guarantee:** 90% payment will be made on submission of shipping documents and balance 10% payment will be made on installation, commissioning and submission of PBG for performance period if the payment is made by LC, otherwise after receipt of stores by any other payment mode. The security deposit so retained may be refunded on submission of Bank Guarantee towards Performance Guarantee valid for **3 years throughout warranty period plus sixty days** drawn on any commercial bank.

No advance/mobilization support, is payable against supply of stores.

In the event of failure to deliver the stores beyond the specified date, liquidated damages @ 1% per month or part thereof in respect of the value of stores will be deducted, subject to a maximum of 5%; alternately the order will be cancelled and the undelivered stores purchased from elsewhere at the risk and expense of the vendor.

(3) **Warranty/Guarantee & On-site skill support:** Minimum **three years** onsite comprehensive OEM warranty from the date of successful installation and commissioning. The firm has to guarantee supply of spares for a minimum period of 10 years. The OEMs/Authorized Distributors and Dealers must attach certificate about their after sales and service facilities, escalation support for on-call service or station engineer etc. AMC for 3 to 5 years to be quoted separately.

(4) **Delivery of Stores:** The store items be supplied within 30 days from the date of receipt of the Purchase Order or from opening of LC whichever is later.

(5) **Tender Fee:** An amount of **INR 5,000** (Rupees five thousand only) as tender fee (non-refundable) is to be paid. The payment shall be made by Demand Draft from
any Nationalized Bank /Commercial Bank and paid in favour of “Indian Institute of Technology Kharagpur”, payable at Kharagpur. **Bids without Tender Fee will not be accepted. This should be enclosed separately in an envelope and stapled with the Technical Bid document superscribing Tender fee.**

(6) **Earnest Money Deposit (EMD):** An amount of INR (2-5% of the estimated value of the goods to be procured leaving out optional items in the specifications) in the form of Demand Draft drawn in favour of “Indian Institute of Technology Kharagpur”, payable at Kharagpur or Fixed Deposit Receipt or Banker’s Cheque to be obtained from the Bidders. **E.M.D. should be enclosed separately in an envelope and stapled with the Technical Bid document superscribing EMD.** The bid security (EMD) is normally to remain valid for a period of 45 days beyond the final bid validity period. **Any bid without EMD will summarily be rejected. No interest is payable on EMD.** EMD will be refunded to the unsuccessful bidder on finalization of the tender process. The EMD of vendor awarded with the contract to be treated as part of security deposit towards Performance Guarantee and will be refunded back on submission of performance security. No interest is payable on Security Deposit. Security Deposit shall be forfeited if the selected vendor after award of contract fails to execute the same.

(7) **Price:** Domestic tenders are to quote and accept their payment in Indian currency. Indian agents of foreign suppliers are to receive their agency commission in Indian currency. Cost of imported goods, which are directly imported against the contract, may quote in foreign currency (currencies) and will be accordingly in that currency and the portion of the allied work and services, which are to be undertaken in India (like installation & commissioning of equipment) are to be quoted and will be paid in Indian currency. The price shall be quoted with cost break-up indicating the applicable prices for each component (custom duty, import duty, landing and clearing charges and commission to Indian agents). Excise Duty Exemption/Custom Duty Exemption Certificate and Inter-state transit Way Bill (Form-50) will be issued only in favour of the bidder and address as mentioned in the Purchase Order.

(8) **Bid:** Technical Bid and Price Bid should be submitted in two separate sealed envelope quoting reference number on the top of the envelope. Tender Fee and EMD should be enclosed with the Technical Bid documents, in separate sealed envelopes, stapled with the packet containing Technical Bid documents. The OEMs may either bid directly or Country/Regional/State Distributors /Dealers/Vendors, to quote authorized with valid authorization certificate, capability to sale and service of the products.

(9) **Acceptance of Tender:** The Authority of IIT Kharagpur does not bind itself to accept the lowest priced bid and reserves the right to reject any or the entire tender bids received without assigning any reason thereof.

(10) **Extra Features:** If the bidder provides any other extra features on the Hardware or Software which are not mentioned in the tender product specifications, then that shall be highlighted in clear terms, with documentary evidence/literature.
(11) **Compliance List:** The proposal be properly indexed and a compliance list against the technical specifications should be provided.

(12) **Service:** Response to ensure quality of services, the deputed Engineer from the OEM/Vendor shall have a minimum of 3 years of experience in the relevant field and must be in the payroll of the OEM/Vendor.

(13) **Installation and Commissioning:** Free of cost at IIT, Kharagpur. The OEM must ensure timely installation of High Resolution Cryo-Analytical 200 keV Field Emission Gun Transmission Electron Microscope with accessories with necessary support to the indenters, as per details and lists to be made available by the Stores & Purchase Section or the indenting Departments/Centres/Schools.

(14) **Validity of licenses:** Software’s licensing price or policy (if any) shall be clearly mentioned.
   
   (a) All licenses should be perpetual
   
   (b) All the accessories shall be from the same OEM

(15) The OEM should be an ISO-9000 and ISO-14001 certified company with due credits to energy conservation and green earth compliance.

(16) **Relevant documents of the OEM shall be enclosed, along with the Technical Bid. Any explanation on this account shall be supported with documentary evidence from the principals.**

(17) **Conditional Offer** will not be accepted.

(18) **Period of Validity:** Bids shall remain valid for acceptance for a period of 120 days from the date of opening of the price bid.

(19) The benefit of any downward price revision (revision on account of budget/financial policy, tax revision, EPZ etc.) is to be given to IIT Kharagpur by the selected OEM/vendor.

(20) **Past Performance of the Vendors will be judged at the time of Technical Evaluation.**

(21) **The Institute does not bind** itself to offer any explanation to those bidders whose technical bids have not been found acceptable by the Technical Evaluation Committee of the Institute.

(22) **Bidders should** enclose the following documents:

(i) Certificate of Registration / Trade License
(ii) Enlistment form (R1), complete in all respect
(iii) Attested copy of PAN card, Service Tax, CST/VAT registration papers
(iv) Banker’s Solvency Certificate
(v) Audited statement of accounts and IT returns for the last three years
(vi) Authorized Distributors/Vendors must submit appropriate authorization certificate and letter from their OEMs, for participation in the said tender.
(vii) Name and address of past satisfactory supplies or minimum three clients to whom such items/stores have been supplied should be mentioned in the technical bid.
(viii) Copy of mandatory test reports, national testing/reliability and endurance test reports etc., certified or conducted at the manufacturing site, granted by the bureaus/quality control departments/national testing laboratories.
(ix) Copy of product literature, for which the prices have been quoted.
(x) A write up on service and maintenance capability, mitigation of risks or breakdown and replacement capability, with the escalation support matrix suggested for the Institute. Vendors must indicate their sales and support service centre in India and their plan to address issues about services, maintaining minimum service inventory etc.
(xi) Signed copy of the tender document, with company seal, agreeing to the terms & conditions and declaration should be provided.
(xii) DGS&D enlistment certificate needs to be attached (applicable only for Indian Agents)

(23) All tenders are to be handed over in a sealed box in the office of the Central Research Facility, IIT Kharagpur. The bids (technical and price bids) once submitted shall be the property of the Institute and shall not be returned to the vendor in future.

(24) The person/officer signing the tender/bid documents should be delegated with an appropriate Power of Attorney (duly endorsed by a Notary Public) by the Chief Executive Office/Managing Director of the Company to sign such documents.

(25) Opening of Price Bids: The Price Bid(s) of only those vendor(s) who are found technically qualified will be opened and the same will be opened before the technically qualified vendor(s). The date for opening of price bids will be notified separately.

(26) Tenderer or his/her authorized representative (with proper authorization letter for attending opening of technical bids and also for opening of price bids) may choose to be present at the time of opening of Technical Bids/Price Bids.

(27) IMPORTANT

1. Director may accept or reject any or all the bids in part or in full without assigning any reason and does not bind himself to accept the lowest bid. The Institute at its discretion may change the quantity/upgrade the criteria/drop any item or part thereof at any time before placing the Purchase Order.
2. A bid submitted with false information will not only be rejected but also the OEM/vendor will be debarred from participation in future tendering process.
3. The OEMs/Vendors need to submit a certificate during opening of technical bids that they are not currently debarred or blacklisted in IIT Kharagpur for any supplies, products or services, or at present in any national organization or educational institute/ university.
4. In case of any dispute, the decision of the Director of this Institute shall be final and binding on the bidders.
5. For any query pertaining to this bid document, correspondence be addressed to:
6. In case the due date for opening tender happens to be a holiday, the same will be opened on the next working day. The timings will however remain unchanged. Please Note that the Institute remains closed on Saturday & Sunday.

Chairman, Central Research Facility
For Director, IIT Kharagpur

Annexure-III

INSTRUCTIONS & SPECIAL CONDITIONS
(To be returned by Tenderer along with the Tender duly signed)

1. GENERAL: Tenderer(s), who are Indian Agents of OEMs should furnish a clear declaration as follows: We declare that I am/we are Accredited Agents of the suppliers aboard. DGS&D enlistment certificate needs to be attached (applicable only for the Indian Agents)

2. DEVIATION FROM SPECIFICATIONS:

It is in the interest of the tenderer to study the specifications in the tender schedule thoroughly before quoting so that, if the tenderer makes any deviations, the same are prominently brought out in the body of the tender. If you need to add any optional items to your system in order to meet our specifications, you are requested to quote for the total including the option required to suit our requirements. Otherwise, your tender will not be considered at all.

3. PRICE:

For imported items both F.C.A./F.O.B. & C.I.F. Kolkata price by Air/Sea to be quoted. The price should be without Customs Duty and Excise Duty since IIT Kharagpur is exempted from the payment of Customs & Excise Duties. The Institute, if required will provide certificates for Import Items: The order acknowledgement should be issued by Fax within 3 days, and the item should be airlifted/boarded in sea within 30 days from the date of receipt of the Letter of Credit/copy of DD, as the case may be.
(i) Agency Commission, if any will be paid to the Indian agents in Rupees on receipt of the equipment and after satisfactory installation. Agency Commission will not be paid in foreign currency under any circumstances.
(ii) The unit prices should be for the same unit as indicated in the Schedule to tender enquiry and not for any other unit.
(iii) Prices quoted should be for supply, installation and commissioning at I.I.T. Kharagpur.
(iv) Discount, if any, should be indicated separately / prominently.
(v) Offers should normally be on fixed and firm price basis. Any clause making price variation will not be acceptable.
(vi) Where tenderer intends to quote in Indian Rupees, for imported items, the price should be quoted “FOR Destination” basis. Offer should be on “High Sea Sales” basis. No sale tax can be charged. Customs Duty applicable against Declaration in Terms of Government of India Notification No.51/96-Customs dated 23.07.96 will be paid. Vendor will arrange payment of customs duty during clearance and the same will be reimbursed at actual against proper documents. Way Bill will be issued on request. Seller has to undertake the responsibilities of customs clearance. All necessary supporting documents will be provided by the IIT Kharagpur. An agreement can be made in this regard, if the seller wishes, before customs clearance.

4. TRANSIT INSURANCE:
The Purchaser will not pay separately for Transit Insurance.

5. PAYMENT:
(i) Payment for indigenous items and also imported items quoted in Indian Rupees will be made only after completion of supply, installation and commissioning of the Systems to the entire satisfaction of the Purchaser. No Advance Payment will be made for Indigenous Purchase.
(ii) Where items are imported and the payment is desired to be made to their foreign Principals directly, the same will be made against Irrevocable Letter of Credit on submission of shipping documents or by any other mode of payment (i.e. Demand Draft/Sight Draft/Wire Transfer) after receipt of stores.

6. TENDERERS SHALL SUBMIT ALONG WITH THEIR TENDER:
(i) Complete address and tele links for contact persons of principals and Indian agent offices dealing with this purchase.
(ii) Name and full address of the OEM’s Banker and their swift code.
(iii) Proof of having ISO 9001 or other equivalent certification given by appropriate authorities.
(iv) If payment is made through LC, then LC opening charges inside and outside India, who will have to bear to be clearly mentioned
(v) Country of origin is to be provided for each item.

7. EARNEST MONEY DEPOSIT: tenderer must submit an EMD of INR in figure (Rupees in word only (REFUNDABLE) IN THE FORM OF BANK DRAFT/BANERS’ CHEQUE IN FAVOUR OF “INDIAN INSTITUTE OF TECHNOLOGY, KCHARAGPUR”. It should be placed in the cover containing of Technical Bid.

1) 8. TENDER FEE: TENDER FEE OF TOTAL INR 5000 (Rupees five thousand only) [NON- REFUNDABLE] IN THE FORM OF BANK DRAFT MUST ACCOMPANY THE TENDER. It should be placed in the cover containing the Technical Bid.

9. PERFORMANCE BANK GUARANTEE:
On behalf of the Principal, Indian Agent must be able to provide Performance Bank Guarantee of the amount equivalent to the 10% of the cost of equipment from any Nationalized Bank. The Performance Bank Guarantee is required for the entire period of Warranty. Performance Bank Guarantee must remain valid for a period
sixty days beyond the expiry of the Warranty Period. Bid security will be refunded back on submission of performance Security.

10. GUARANTEE:

The tenderer has to declare that the goods sold to the buyer under this contract shall be of the best quality and workmanship and shall be strictly in accordance with the specifications.

11. JURISDICTION:
All questions, disputes, or differences arising under, out of or in connection with the contract, if concluded, shall be subject to the exclusive jurisdiction at the place from which the acceptance of Tender is issued i.e. Jurisdiction of KOLKATA HIGH COURT. Acceptance to this effect is also necessary at the time of opening of Technical Bid.

12. ACKNOWLEDGMENT:
It is hereby acknowledged that we have gone through all the points listed under “Instructions & Special Conditions” outlined above, and those in the accompanying note on “Important Conditions”, and we agree to abide by them under the penalty of permanent disqualification for Tender participation and for related penal actions for non-abidance of the conditions.

13. Interested vendors must be able to supply adequate spares and consumable during three year warranty. Vendor should also ensure trouble free service and performance for another two years beyond three years Comprehensive Warranty Period with adequate spares and accessories.

SIGNATURE OF TENDERER ALONG WITH SEAL OF THE COMPANY WITH DATE

NOTE: ONE AGENT CANNOT REPRESENT TWO SUPPLIERS OR QUOTE ON THEIR BEHALF AT ONE TIME.

In case of import all the particulars required for opening Letter of Credit (L/C) should be furnished in clear terms. After opening of L/C, based on our tender, no more requests for amendment of L/C will be entertained. Total price including supply, installation and commissioning at I.I.T., Kharagpur, should be quoted. The cost of items that may be supplied from indigenous resources and also installation part if installation is done by Indian Agents should be stated in Indian Rupees.

1. In case of Import, bidders are requested to quote FCA/FOB price mentioning Freight & Insurance charges separately. Ex-Works pricing may be considered.
2. Warranty should be valid for Three years for all items including third party items.
3. Quotations should be submitted in Separate Sealed Cover (with Sealing Wax). The quotation should be in typed format. No manual entries are allowed and any manual entry will entail rejection at the opening stage itself.
4. Before submitting vendor should ensure that they have submitted the following in the technical bid, the documents as mentioned hereunder: Technical Literature, Specification documents, Point-by-point Compliance Statement, General Terms &
Conditions, Acceptance of Kolkata High Court Jurisdiction, Name and address of 5 organizations of which 1 must be in India where the OEM has installed 1 such equipment in the last 2 years and a copy of Price bid with prices masked.

The Commercial bid shall have all the commercial documents, agreements and Price bid. Prices should be given component wise to enable the Institute to decide the final configuration.
TECHNICAL BID DOCUMENT

FORMAT TO BE FILLED BY THE MANUFACTURERS/ INDIAN AGENTS (ON BEHALF OF THEIR FOREIGN PRINCIPLES) OR THEIR AUTHORIZED COUNTRY DISTRIBUTORS/ REPRESENTING DEALERS/ REGIONAL AGENCIES, SUBMITTING TENDER FOR SUPPLY OF NAME OF ITEM FOR IIT KHARAGPUR (DEPARTMENT OF NAME OF DEPARTMENT)

1. Name of the Tenderer:

2. Status of the Tenderer: (attach documents, if registered company/partnership/proprietyship)

3. Whether OEM/representing foreign principle: (attach copy of certificate/authorization)

4. Details of key top official/authorized official: (attach details)

5. Details of tie-ups for supply/services, if any: (Attach details, agreements, escalation matrix)

6. Income Tax and Service Tax returns of previous three assessment year (copy):

7. Financial status of bidder and/or his associates including Annual Report & Balance Sheet/ Statement of Account of past three years with Registration of Companies (ROC) receipts duly authenticated by Chartered Accountant:

8. Current list/address of clients where similar material has been supplied and successfully working:

9. Name of the vendor's three largest clients, to whom similar products and services were extended & amount of transaction/annual bills to such clients:

10. Name and address of Vendor’s bankers and attach a Solvency Certificate from the Bank for a minimum amount of Rs. 20.00 Lakh:


12. Details of EMD/Bank Draft No., issuing branch and date:

Certified that all above information are correct to the best of my/our information, knowledge and belief.

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Dated
signature & seal of the Authorized person of OEM/Vendor

NOTE: This is to be submitted in a separate sealed envelope super scribing “TECHNICAL BID”, Notice inviting Tender No.IIT/Dept/ Name of Item/2014-15 and name of the bidder. All technical documents like literature, catalogues etc., are to be put in the same envelope. Price bid of that company/firm only will be opened which do technically qualify, for further consideration. Attach all relevant documents in the same serial order as above, properly indexed, duly signed and sealed.
DECLARATION

1. I, _____________________________________________Son /Daughter of Shri ____________________________
______________________________ Proprietor/Partner/CEO/MD/Director/
Authorized Signatory of M/s. ________________________________ am competent
to sign this declaration and execute this tender document.
2. I have carefully read and understood all the terms and conditions of the tender
and hereby convey my acceptance of the same.
3. The information/ documents furnished along with the above application are true
and authentic to the best of my knowledge and belief.
4. I/we am/are well aware of the fact that furnishing of any false information/
fabricated document would lead to rejection of my tender at any stage besides
liabilities towards prosecution under appropriate law.
5. Each page of the tender document and papers submitted by my Company is
authenticated, sealed and signed, and I take full responsibility for the entire
documents submitted.

____________________________________ Signature of the Authorized Person

Date: ____________________ Full Name: ______________________

Place: _______________________ Company Seal: ________________