

**DEPARTMENT OF METALLURGICAL AND MATERIALS ENGINEERING
INDIAN INSTITUTE OF TECHNOLOGY ROORKEE
ROORKEE 247667 UTTARAKHAND INDIA**

No. MMED/ 364 / SEM/2012

Dated: February 8, 2012

**Tender Notice for
Tungsten Filament Scanning Electron Microscope with Energy Dispersive Spectroscopy**

On behalf of the Board of Governors of IIT Roorkee, sealed tenders under Two-Bid (Technical and Commercial) system are invited from reputed firms meeting the eligibility criteria as specified in the Tender Documents, for the supply and installation of "Tungsten Filament Scanning Electron Microscope with Energy Dispersive Spectroscopy" at the Department of Metallurgical and Materials Engineering, IIT Roorkee.

The detailed Tender document may be obtained from our website <http://www.iitr.ac.in> or by post from the undersigned. The sealed tenders should reach the undersigned by 15.00 hours on 05 March 2012, which will be opened on the same day at 16.00 hours in the Department of Metallurgical and Materials Engineering.

Address for Communication:

Professor & Head

Department of Metallurgical and Materials Engineering

IIT Roorkee, Roorkee-247667 (Uttarakhand)

Tel: 01332-285606, Fax: 01332-285243

Email: metal@iitr.ernet.in

Tender Fees: Rs. 1,000.00

Issue Date: February 8, 2012; Closing Date: March 05, 2012



Professor and Head
MMED, IITR

Dr. P. K. Ghosh
Prof. & Head
Metallurgical and Materials Engineering
Indian Institute of Technology Roorkee
Roorkee-247 667, Uttarakhand (INDIA)

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DETAILED TENDER DOCUMENT

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Tender Document & Tender Fee:

1. The Tender document may be obtained from the office of the undersigned on any working day, for a tender fee of Rs. 1,000.00
2. The tender document may also be downloaded from the institute website www.iitr.ernet.in. In this case, a Demand Draft for Rs.1,000.00 in favour of “The Registrar I.I.T. Roorkee” payable at Roorkee as tender fee must be sent along with the tender document.

I. Tender Process

The tender will be accepted through a two-bid (Technical & Commercial) system. Thus the tender bid should be submitted in two parts- (i) The Technical bid, and (ii) The Financial Bid – all in duplicate in separate sealed covers. All the four sealed packets should be put in one sealed envelope labelled “Tender Notice No. MMED/ 364/ SEM/2012 and Due date: **March 5, 2012**. The bids complete in all respect must be submitted to the undersigned latest by 15:00 hours on **March 5, 2012**. The Technical bids will be opened at 16:00 on **March 5, 2012**.

The representatives of the bidders may be present at the time of opening of Technical bids. On the basis of Technical bid papers provided, the eligible Bidders will be shortlisted as Technically Qualified Bidders by the Technical cum Purchase Committee.

Such Technically Qualified bidders will be informed by post/e-mail.

The financial bids (of only the Technically Qualified bidders) will be opened for which the dates will be informed in advance.

The final selection of the bidder for the award of the contract will be made on the basis of the lowest commercial bid amongst the Technically Qualified Bidders.

II. Important Dates for the Tender

Issue Date : **February 8, 2012**

Closing Date : 15:00 hours, **March 5, 2012**

Opening of Technical bids : 16:00 Hours **March 5, 2012**.

III. General Guidelines, terms & Conditions

1. The Tender should be submitted in duplicate duly signed by an authorized signatory and on a printed letter pad, preferably with sales tax number of the firm. The duplicate copy of the tender must bear original signature as it will be kept safely in the custody of the Head of the Department for any future reference.
2. All the specifications and technical details claimed in the tender should be supported by the printed original literature of the principal firm.
3. While sending quotations the firm shall give an undertaking to the effect that the terms/conditions mentioned in the tender document against which the rates are being given are acceptable to the firm. In case the firm does not give this undertaking, their bids will not be considered.
4. Foreign and Indian currency components must be quoted clearly and separately excluding custom/excise duty as IITR is exempted of these.
5. The rates must be quoted both in figures and words and over-writing should be avoided. Cuttings/corrections, if any, must be duly authenticated.
6. For any Proprietary item, a Certificate to this effect issued by the manufacturer should be submitted.
7. If the supplier firm is manufacturer/authorized dealer/sole distributor of any item, the certificate obtained from principal firm to this effect should be attached.
8. The whole supply as per order shall have to be completed within the time mentioned in the order failing which the Department shall have the right to accept or reject any quality of goods ordered.
9. The supply shall be made within the time mentioned in the order. In case of imports the delivery period will start from the date of opening of L.C.
10. The rates should be quoted F.O.B for imported items and F.O.R. for indigenous items. Any applicable taxes, levies, duties etc. should be clearly mentioned.
11. The quotations should preferably be given for the items in the same order and in the same measurement units, wherever applicable, as in the tender document.
12. Quality Assurance: After the contract/order is negotiated, the firm may be required to provide the standard Acceptance Test Procedure (ATP). Inspecting Authority appointed by IIT Roorkee reserves the right to modify the ATP as and when necessary. Items would be accepted subject to evaluation and clearance by the Inspecting Authority. Firm would be required to provide all test facilities on site for inspection and acceptance by the inspecting Authority. The details in this regard will be coordinated during the negotiation of contract. The items should be of latest manufacture conforming to the current production standards having 100% defined life at the time of delivery.
13. A comprehensive warrantee for TWO years for all the components including any third party component of the system from the date of installation is required.
14. In case of any dispute, the same shall be subject to the jurisdiction of the Roorkee and/ or Uttarakhand state.
15. The supplied equipment should be a complete system in itself to perform all the specifications as given in the **ANNEXURE-1**.
16. Certification: All hardware provided is to be tested for its performance as per the specifications of the tender document and a certificate to this effect is to be submitted.
17. The bidder shall supply the Hardware, Software and other related components, in totality/entirety as per the requirements.
18. The rates quoted should be applicable to educational institutions, and any cost advantage received in lieu thereof should be passed on to the Institute.
19. The Tender should be valid for at least a period of 90 days from the date of opening.

20. IIT Roorkee may revise or amend the specifications and other conditions prior to the date notified for receiving the tenders. Such revision and amendments, if any, will be communicated to all prospective bidders. It will be notified through the website of the institute <http://www.iitr.ernet.in>. In such a case, IIT Roorkee will have the discretion to extend the last date and time for receiving and opening of the tender, if considered necessary.

IV. Technical Bid

The Technical bid (in a separate sealed envelope) must be submitted in an organized and structured manner as per the format in **ANNEXURE – I in hard as well as soft copy**. No brochures/leaflets etc. should be submitted in loose form. The technical offer should provide compliance statement along with documentary evidence for the technical compliance. The technical bid should necessarily accompany the following documents/instruments:

1. **Earnest Money Deposit (EMD):** Each bid must be accompanied by EMD of Rupees 1.7 Lacs in the form of Demand Draft only of any Indian nationalized bank drawn in favour of “Registrar, I.I.T. Roorkee” No other mode is permissible including equivalent amount of B.G or cheque.
2. A letter of authority duly signed by an authorized signatory.
3. Complete details of equipment quoted including Make, Model, Manufacturer & Part Number should be given.
4. Delivery and installation schedule.
5. Any deviation in Compliance of any of the terms or conditions should be clearly indicated in remarks & explained in a separate deviation sheet.
6. Soft copy of technical compliance statement.

V. Financial Offer

The financial bid (in a separate sealed envelope) should be submitted in the format given at Annexure – I. The general guidelines for submitting the financial offer are as follows:

1. Cost (with unit rates) of all individual items and components must be shown separately, and taxes, as required should be mentioned.
2. All costs should be given in Figures and Words. All the Govt. Levies like sales tax, Octroi, Excise Duty, and Educational Cess, Service Tax etc, if any, should be clearly and separately mentioned for each item or component. However all taxes will be paid at actual rates applicable at the time of delivery.
3. The rates quoted should be applicable to educational institutions and any cost advantage received in lieu thereof should be passed on to the institute.
4. Prices once quoted shall not be subject to escalation of any nature.
5. The successful bidder will have to provide a Performance Bank Guarantee of 5% of the total order value for the entire period of warranty starting from the date of installation.

VI. Procedure for short Listing of Technically Qualified Firms for opening of Financial Bids

All technical bids will be evaluated by the Technical cum Purchase Committee. The financial bids of only those bidders who are found technically qualified by the Technical cum Purchase Committee will be opened and compared for selecting the lowest commercial bid. The bidders may send their representative at the time of opening of the commercial bids.

VII. Earnest Money Deposit

1. Each bid must be accompanied by Earnest Money Deposit as mentioned above.

2. The words Earnest Money Deposit should be written on the envelope containing the draft.
3. The bids received without Earnest Money Deposit will be summarily rejected.
4. Earnest Money is liable to be forfeited and bid liable to be rejected, if the bidder amends or impairs or withdraws from the tender within the period of validity of the tender.
5. The Earnest Money Deposit of unsuccessful bidders shall be returned within one month of the placement of Purchase Order.
6. No interest will be payable by I.I.T. Roorkee on the Earnest Money Deposit returned to the unsuccessful or successful bidders.

VIII. Rejection of Bids:

1. The institute reserves the right to reject any or all tenders, wholly or partly without assigning any reason whatsoever.
2. If any of the bidders give wrong information in their bid, IIT Roorkee reserves the right to reject such bids at any stage and the bidder stands to forfeit the Earnest Money Deposit / Performance Bank Guarantee and cancellation of the order, if already awarded.
3. Incomplete bids are liable to be rejected.
4. If the technical offer contains any price information the offer will be summarily rejected.
5. Canvassing in any form in connection with the tender is strictly prohibited and the bids submitted by the bidder who resort to canvassing are liable for rejection.
6. IIT Roorkee shall not pay any costs incurred towards preparation and submission of the bids or any other expenditure in this regard.
7. Unsigned tenders/bids, unattested corrections and over writing by bidders are also liable for rejection.
8. Bids not adhering to the specifications will be summarily rejected.
9. The schedule for accepting the tenders shall be strictly followed- late tenders shall not be accepted.

IX. Payment Terms:

1. The payment term will be 100% after satisfactory installation of equipment and commissioning or 100% advance against a Bank Guarantee of 110% amount valid for six months or 100% through a Letter of Credit.
2. The bidder should clearly specify the payment terms.

X. Supply and Installation :

1. The bidder will provide all the documentation and testing reports of the materials and equipments.
2. The bidder will have to arrange for all the testing equipment & tools required for installation and testing at his own cost.
3. I.I.T. Roorkee will have the right to reject the component/equipment installed, if it does not comply with the specifications at any point of installation/inspections.

XI. Penalty Clause:

1. The supply and installation of the equipment should be completed within the maximum period specified in the confirmed order. A penalty of 0.5% of total order value per week shall be levied for the delay in supplying the equipment, excluding the delays due to Force Majeure conditions, subject to a maximum of 5% of total order

value. IIT Roorkee shall reserve the right to cancel the Contract/Purchase Order under these circumstances.

2. In case of the non-supply of the equipment after the acceptance of the Purchase Order - Earnest Money Deposit and Performance Bank Guarantee will be forfeited by the Institute and the supply order shall be placed with the next bidder who has quoted the next lowest rates, at the risk and cost of the defaulting bidder and difference in prices shall be chargeable to the defaulting bidder. In case the defaulting bidder fails to pay the differential cost, legal action shall be taken against the defaulting bidder.

XII. Arbitration Clause:

In the event of any difference or dispute arising out this purchase, all effort shall be made by both the parties to settle the same amicably. Failing an amicable settlement, the dispute shall be finally settled through arbitration conducted under the Arbitration and Conciliation Act 1996, by arbitrators appointed in accordance with the said Act. The arbitration shall give reasoned and speaking award. All disputes are subject to Roorkee jurisdiction only.

XIII. Force- Majeure

For the purpose of and within the scope of contract by way of indication and not of limitation, the term 'Force Majeure' shall mean acts of nature, strikes, Lockouts, or other industrial disturbances, act of public/enemy, wars, blockades, insurrection, riots, epidemics, landslides, earthquakes, storms, lightening, flood, washouts, civil disturbances, explosions and any other similar event not within the control of either party and which by exercises of due care and diligence neither party is able to prevent or overcome.

XIV. Address for Communication:

Professor and Head
Department of Metallurgical and Materials Engineering
Indian Institute of Technology Roorkee
Roorkee-247667 (Uttarakhand)
Tel: 01332-285606, Fax: 01332-285243
Email: metal@iitr.ernet.in

Copy to:

1. Central Purchase Officer, I.I.T., Roorkee for information.
2. Notice Boards of the Centre.
3. Head, ISC for displaying on I.I.T. website.



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ANNEXURE – I

Technical Specifications for:

Tungsten Filament Scanning Electron Microscope with Energy Dispersive Spectroscopy

Detailed Specifications:

1. Wehnelt Assembly:
 - a. Set of 20 Factory pre-centred W Filament
2. Acceleration Voltage: 0.5 kV or less to 30 kV or more
3. Resolution: (Specify the method of measurement)
 - a. SE Mode: 3 nm or better at 30 kV; 10 nm or better at 3 kV
 - b. BSE Mode: 4.5 nm or better at 30 kV
4. Specimen Chamber:
 - a. Specimen stage:
 - i. X, Y travel = 100 mm or better (motorized)
 - ii. Z travel = 50 mm or better (specify if motorized/manual)
 - iii. Rotation = 360° (motorized)
 - iv. Tilt -10° or lower to +75° or higher (specify if motorized/manual)
 - b. 20 specimen holder stubs
5. Vacuum System:
 - a. Rotary Pump + Oil Free Turbo Molecular Pump
 - b. Fully Automatic Electromechanical Valves
6. Detectors:
 - a. Everhart-Thornley Secondary Electron Detector with adjustable Collector Bias
 - b. Multi-Quadrant Semiconductor Back Scattered Electron Detector
7. Energy Dispersive Spectroscopy:
 - a. Si-drift Diode Detector for detection down to Beryllium
 - b. Specify if liquid N₂ free or not
 - c. Resolution: 132 eV @ Mn K α or better
 - d. Capability: Qualitative Elemental Analysis, Standard-less Quantitative Elemental Analysis, Elemental Mapping – Point, Line and Area Analysis
 - e. Standard: To include Cobalt Standard Specimen
 - f. i7 processor computer with 4GB RAM or better and 19" TFT Monitor
8. System Control:
 - a. i7 processor computer with 4GB RAM or better and 19" TFT Monitor
 - b. Latest Windows OS
 - c. Software for Total System Control : SE and BSE detector, Lens, Scanning Conditions, Stage Control, Image Acquisition and Recording
 - d. Automatic Control of functions: Magnification, Filament Saturation, Brightness and Contrast, Stigmator, Focus, Beam Alignment, etc
9. Digital Image Processor:
 - a. 3072 x 2304 pixel or better (please specify)

- b. Variable scan speeds
 - c. 256 Frame Continuous Averaging and Integration
 - d. Split screen Imaging mode
 - e. Image post-processing
 - f. Signal mixing in user defined ratios
10. Image Display:
- a. 19" TFT monitor
 - b. Reduced Area Scanning
 - c. Live image point-to-point measurement
 - d. Spot Mode beam positioning
11. Future EBSD upgrade capability
12. Safety Features:
- a. Microscope Protection against Power Failure
 - b. Microscope Protection against Vacuum Failure
 - c. UPS power backup for SEM system for 1 hour
13. Manuals: Operations and Maintenance Manuals (soft and hard copy)
14. Spares: All necessary spares for components which require frequent replacement for 3 years trouble free operation
15. Optional Items:
- a. Set of 40 Factory pre-centred W Filament
 - b. Chamber CCD IR Camera
 - c. Upgrade to LaB6 Source
 - d. Carbon Coating Unit
 - e. EBSD : CCD chip resolution of 1300x1000 pixel or better; Pixel binning 8x8; Software for beam control, data collection and analysis (2 licences); Software for grain size and recrystallisation, boundary characterization, phase identification, texture characterization; Orientation Distribution Function software; PC Workstation, 20" TFT monitor
16. Prices : To be quoted as CIF New Delhi
17. Delivery: 3 Months from issue of LOC
18. Installation/Training: Installation, Commissioning and On-site Training
19. Warranty: 2 Years from Installation for both parts and labour

Certification: The supplier will certify that the whole package of equipment will be capable of doing (i) Secondary Electron Imaging, (ii) Back Scattered Electron Imaging and (iii) Energy Dispersive Spectroscopy Analysis with respective data acquisition and storage, in an integrated manner, without need for any other accessories.

Compliance statement: With soft copy - point wise according to our document

User List: Provide user list with contact (address and Phone) details for last 3 years

Note: All the quotations submitted against the Tender should be complete in all respect, incomplete bids will be rejected.