

# *TENDER DOCUMENT FOR*



## *SUPPLY, INSTALLATION, COMMISSIONING & TRAINING OF FIELD EMISSION SCANNING ELECTRON MICROSCOPE WITH EDS, LAME & BF-STEM DETECTORS*

*NATIONAL CENTRE FOR ANTARCTIC & OCEAN RESEARCH*

*(Ministry of Earth Sciences, Govt. Of India)*

*Headland Sada, Vasco-da-Gama*

*GOA -403 804, INDIA.*

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**NATIONAL CENTRE FOR ANTARCTIC & OCEAN RESEARCH**  
**(Ministry of Earth Sciences, Govt. Of India),**  
**HEADLAND SADA, VASCO-DA-GAMA,**  
**GOA - 403 804**

**TENDER NO. NCAOR/LAB-2079/PT-22**  
**TENDER FOR SUPPLY, INSTALLATION, COMMISSIONING & TRAINING OF**  
**FIELD EMISSION SCANNING ELECTRON MICROSCOPE WITH EDS, LABE &**  
**BF-STEM DETECTORS.**

1.	<b>SUPPLY, INSTALLATION, COMMISSIONING &amp; TRAINING OF FIELD EMISSION SCANNING ELECTRON MICROSCOPE WITH EDS, LABE &amp; BF-STEM DETECTORS.</b> <b>Specifications</b> <b>Quantity</b>	As per Annexure-I 01 No.
2.	General Terms and Conditions	As per Annexure II
3.	Cost of Tender Documents (In Person)	US \$ 50.00 ` 2,000.00
4.	Cost of Tender Documents (By Post)	US \$ 65.00 ` 2,050.00
5.	EMD	<p><b>Tender documents can be downloaded by tenderers from NCAOR website. In case a tenderer is using the documents and forms downloaded from the website, the cost of tender documents shall be sent in the form of Bank Draft in a separate envelope along with the tender.</b></p> <p><b>A) Foreign Bidders</b> shall submit <b>EMD</b> along with their tender, <b>in the form of a bank guarantee only</b> for a sum of US \$ 1750.00 (US\$ One Thousand Seven Hundred Fifty only)</p> <p><b>B) Indian Bidders</b> shall submit <b>EMD</b> along with their tender, either by DD drawn in favor of NCAOR, for a sum of ` 1, 00,000/- (Rupees One Lakh only) payable at Vasco-da-Gama only.</p> <p style="text-align: center;"><b>Or</b></p> <p><b>In the form of a bank guarantee</b> for a sum of ` 1,00,000/- (Rupees One Lakh only)</p>
6.	Last Date and time for issue of tender documents	<b>MONDAY</b> <b>27.01.2014</b> 1600Hrs (IST)
7.	Last Date and time for submission of sealed quotations	<b>TUESDAY</b> <b>28.01.2014</b> 1700Hrs (IST)
8.	Date and time of tender opening	<b>WEDNESDAY</b> <b>29.01.2014</b> 1000Hrs (IST)

## **SPECIFICATIONS FOR FIELD EMISSION SCANNING ELECTRON MICROSCOPE WITH EDS, LABE & BF-STEM DETECTORS.**

This tender includes the supply, installation, commissioning and on-site training in the use of a high-end Field Emission Scanning Electron Microscope (FESEM), fully self-contained with all necessary support systems such as vacuum system, cooling system and high tension power supply system. The instrument must be a state of art, computer controlled user friendly system for ultra high resolution imaging and analytical investigations of conducting, non-conducting samples in the form of minerals, thin films, crystals etc. ranging from micro to nano scale dimensions. The system should have an EDS capability for qualitative and quantitative microanalysis and should be upgradeable at a later date for WDS and other attachments as specified in item 8. The FESEM must have the following specifications:

### **1. RESOLUTION:**

The secondary electron image resolution must be better than:

- 1.1 1.0 nm at 15 KV and
- 1.2 1.5 nm at 1KV or better in specimen reverse biasing mode and
- 1.3 3.0 nm at 15 KV with probe current of 5nA or better.

### **2. MAGNIFICATION:**

- 2.1 The magnification range should at least cover from 25X to 1000000X or better.

### **3. ACCELERATING VOLTAGE:**

- 3.1 The accelerating voltage should be variable from 0.1 KV to 30 KV

### **4. ELECTRON GUN:**

- 4.1 The electron gun has to be of Schottky field emission type and should be covered under warranty for at least three years.

### **5. PROBE CURRENT:**

- 5.1 The probe current should continuously adjustable by software control upto 200 nA or better. Probe current changes by changing aperture sizes are unacceptable.
- 5.2 Please provide beam current stability to be specified in percentage over 1 hour, 6 hour, 12 hours of continuous operation.

### **6. CHARGE COMPENSATION:**

- 6.1 Charge reduction mode for non-conducting or insulating specimen.
- 6.2 Energy filter mode for detection of appropriately selected energy range of emitted electrons from the specimen.
- 6.3 The bias mode applied to the specimen holder to decelerate incident electrons just before they hit the specimen should also be possible to remove charging on non-conductive specimens so as to allow true surface information to be observed.
- 6.4 Landing energy variable from 0.1 V – 30 KV.

### **7. DETECTORS:**

- 7.1 Imaging with Secondary Electrons (SE) and
- 7.2 Imaging with Back Scattered Electrons (BSE) and

**7.3** Imaging with Low Angle Backscatter Electron Detector (LABE) and

**7.4** Imaging with Bright Field-STEM is required.

**7.5** Imaging with filter mode should be provided. The filter mode should allow pure SE signals, pure BSE signals and mixture of SE and BSE signals to be detected by in-lens secondary electron detector.

**7.6** It should be also possible to simultaneously display a maximum of four live images on the monitor.

**8. COMPATIBILITY FOR FUTURE EXPANSION:**

**8.1** The system should be equipped to subsequently add additional detectors and accessories like retractable BS and in-lens BS detector, WDS, EBSD, CLD, CRYO, COLD STAGE.

**9. SPECIMEN STAGE:**

**9.1** All specimen exchange must be done through a load lock system.

**9.2** Allowable specimen diameter through load lock must be 100 mm diameter or more. The load lock size should be compatible with the specimen size.

**9.3** The load lock status should be displayed on GUI.

**9.4** The specimen stage must be computer controlled fully eucentric goniometer type. The stage movement should be fully motorized in X, Y, Z, tilt and rotation direction.

**9.5** The position of specimen stage should be graphically displayed on the monitor.

**9.6** Stage navigation system: GUI with click to navigate to the feature of interest and store locations to enable going back to the feature.

**9.7** Multi-specimen holders to be provided.

**9.8** Specimen size should be 100 mm diameter or better.

**9.9** The minimum requirements are:

**9.9.1** X (mm) = 70 mm or better

**9.9.2** Y (mm) = 50 mm or better

**9.9.3** Z (mm) = 40 mm or better

**9.9.4** T (deg) = -5 to 70 deg or better

**9.9.5** R (deg) = 360 deg endless, motor driven

**9.10** Should be compatible with WDS, CLD and EBSD detectors.

**10. ANTI-CONTAMINATION DEVICE:**

**10.1** A liquid nitrogen trap should be provided to minimize contamination from entering the objective lens.

**11. SPECIMEN CHAMBER CAMERA:**

**11.1** An IR device should be attached to the specimen chamber to facilitate viewing inside the analysis chamber.

**12. VACUUM SYSTEM:**

**12.1** The vacuum system should be fully automatic, fast, clean and contamination free.

**12.2** It should comprise a TMP, RP, SIP or equivalent.

**12.3** One set of UPS for the ion pumps must be supplied along with the system.

**12.4** The UPS should be able to support the ion pumps for at least 200 hours continuously in case of power failure.

**12.5** An anti-contamination cold trap system must be included.

**12.6** Two separate UPS systems, one for the cooling system and the other for the entire system each with back-up time of 2 hours or better.

**13. CALIBRATION STANDARDS:**

13.1 Standard samples to check the system calibration i.e magnification, resolution etc. should be supplied along with the system.

**14. IMAGE PROCESSING SOFTWARE:**

14.1 Image processing functions such as image averaging, integration, pseudo colour etc should be included.

14.2 Two-division and four-division image display should also be possible.

14.3 The digital images should have resolution 1280x1024 pixels or better and should be saved in BMP, TIFF or JPEG format.

14.4 Linewidth and particle size measurement capability must be included.

**15. COMPUTER SYSTEM:**

15.1 Latest compatible branded high speed computer core i7 or better with Windows 7 Profession with 8 GB or more RAM with dual full HD monitors of size with 21 inch sized or greater RAID hard disc system with dual 1 TB hard drive systems, along with peripherals such as keyboard, mouse, high quality color laserjet with duplex multi-function printer with wi-fi capability etc. should be supplied along with the instrument.

15.2 All necessary software/s to operate the equipment should also be included.

**16. MICROANALYSIS (EDS) SYSTEM:**

16.1 A microanalytical system, computer and software should be attached to the microscope for energy dispersive microanalysis.

16.2 It should detect and quantify all elements from Beryllium to Uranium and must have SDD crystal area of 50 mm<sup>2</sup> or more and a detector resolution of at least  $Mn\alpha$ 127eV or better.

16.3 Must be an LN2 free system using vibration free thermoelectric Peltier cooling technology.

16.4 It should be capable of qualitative, quantitative and mapping analysis.

**17. EDS SOFTWARE:**

17.1 EDS software should be 100% compatible with Windows 7 and 64 bit Professional Operating System.

17.2 Data transfer to all parts of the software must be automatic and requires no user intervention.

17.3 The software must provide single button report generation with print preview, without the need to use third party word processing packages.

17.4 The software must allow for user-customizable reports.

17.5 Software screens must include bubble help to guide user systematically through required operations.

17.6 It must also provide automatic peak labeling during spectrum acquisition without the need for user intervention.

17.7 The software must provide quantitative analysis automatically using information from the microscope and qualitative analysis.

17.8 The system should be able to perform X-ray mapping for all elements from beryllium to uranium.

17.9 Quantitative analysis by either standard or standardless mode must be compatible.

**18. ANALYTICAL STANDARDS:**

18.1 Sets of elemental and oxide standards covering all geological analytical applications.

**19. SAFETY FEATURES:**

**19.1** Protection features against vacuum, water and power must be provided.

**20. TRAINING AND INSTALLATION:**

**20.1** The supplier shall install and commission the system immediately after delivery.

**20.2** System installation shall be carried out by factory trained engineers.

**20.3** Training on the operation of the system by experienced and qualified engineer must be provided on-site at two levels: initial operational and maintenance training and after 6 months an advanced application training.

**21. WARRANTY:**

**21.1** One year standard warranty for parts and labour.

**21.2** Optional two years extended warranty for parts and labour.

**21.3** Quote for additional 5 years of AMC.

**22. SPARES AND CONSUMABLES:**

**22.1** Spares and consumables for two years of operation.

**22.2** Operational manuals in English for all the equipments must be provided.

**23. OPTIONAL FEATURES AND ACCESSORIES TO BE QUOTED SEPARATELY:**

**23.1** A cooling stage-temp range of -20°C to + 10°C

Company should be reputed with sufficient scientific installations in running conditions in India for which a list of such installations should be provided with end-user contact information and dates of installation.

**TECHNICAL COMPLIANCE STATEMENT FOR FIELD EMISSION SCANNING  
ELECTRON MICROSCOPE WITH EDS, LABE & BF-STEM DETECTORS.**

SR. NO.	FEATURES	SPECIFICATIONS FOR SUPPLY OF FIELD EMISSION SCANNING ELECTRON MICROSCOPE		COMPLIED/ NOT COMPLIED	EXTRA FEATURES
1.	Resolution	The secondary electron image resolution must be better than:			
		1.1	1.0 nm at 15 KV and		
		1.2	1.5 nm at 1KV or better in specimen reverse biasing mode and		
		1.3	3.0 nm at 15 KV with probe current of 5nA or better.		
2.	Magnification	2.1	The magnification range should at least cover from 25X to 1000000X or better.		
3.	Accelerating Voltage	3.1	The accelerating voltage should be variable from 0.1 KV to 30 KV		
4.	Electron Gun	4.1	The electron gun has to be of Schottky field emission type and should be covered under warranty for at least three years.		
5.	Probe Current	5.1	The probe current should continuously adjustable by software control upto 200 nA or better. Probe current changes by changing aperture sizes are unacceptable.		
		5.2	Please provide beam current stability to be specified in percentage over 1 hour, 6 hour, 12 hours of continuous operation.		
6.	Charge Compensation	6.1	Charge reduction mode for non-conducting or insulating specimen.		
		6.2	Energy filter mode for detection of appropriately selected energy range of emitted electrons from the specimen.		
		6.3	The bias mode applied to the specimen holder to decelerate incident electrons just before they hit the specimen should also be possible to remove charging on non-conductive specimens so as to allow true surface information to be observed.		
		6.4	Landing energy variable from 0.1 V – 30 KV.		
7.	Detectors	7.1	Imaging with Secondary Electrons (SE) and		
		7.2	Imaging with Back Scattered Electrons (BSE) and		
		7.3	Imaging with Low Angle Backscatter Electron Detector (LABE) and		
		7.4	Imaging with Bright Field-STEM is required.		
		7.5	Imaging with filter mode should be provided. The filter mode should allow pure SE signals, pure BSE signals and mixture of SE and BSE signals to be detected by in-lens secondary electron detector.		
		7.6	It should be also possible to simultaneously display a maximum of four live images on the monitor.		
8.	Compatibility For Future	8.1	System should be equipped to subsequently add additional detectors and accessories like		

	Expansion		retractable BS and in-lens BS detector, WDS, EBSD, CLD, CRYO, COLD STAGE.		
9.	Specimen Stage	9.1	All specimen exchange must be done through a load lock system.		
		9.2	Allowable specimen diameter through load lock must be 100 mm diameter or more. The load lock size should be compatible with the specimen size.		
		9.3	The load lock status should be displayed on GUI.		
		9.4	The specimen stage must be computer controlled fully eucentric goniometer type. The stage movement should be fully motorized in X, Y, Z, tilt and rotation direction.		
		9.5	The position of specimen stage should be graphically displayed on the monitor.		
		9.6	<u>Stage navigation system</u> : GUI with click to navigate to the feature of interest and store locations to enable going back to the feature.		
		9.7	Multi-specimen holders to be provided.		
		9.8	Specimen size should be 100 mm diameter or better.		
		9.9	The minimum requirements are:		
			9.9.1 X (mm) = 70 mm or better		
			9.9.2 Y(mm) = 50 mm or better		
	9.9.3 Z (mm) = 40 mm or better				
	9.9.4 T (deg) = -5 to 70 deg or better				
	9.9.5 R (deg) = 360 deg endless, motor driven				
	9.10	Should be compatible with WDS, CLD and EBSD detectors.			
10.	Anti-Contamination Device	10.1	A liquid nitrogen trap should be provided to minimize contamination from entering the objective lens.		
11.	Specimen Chamber Camera	11.1	An IR device should be attached to the specimen chamber to facilitate viewing inside the analysis chamber.		
12.	Vacuum System	12.1	The vacuum system should be fully automatic, fast, clean and contamination free.		
		12.2	It should comprise a TMP, RP, SIP or equivalent.		
		12.3	One set of UPS for the ion pumps must be supplied along with the system.		
		12.4	The UPS should be able to support the ion pumps for at least 200 hours continuously incase of power failure.		
		12.5	An anti-contamination cold trap system must be included.		
		12.6	Two separate UPS systems, one for the cooling system and the other for the entire system each with back-up time of 2 hours or better.		
13.	Calibration Standards	13.1	Standard samples to check the system calibration i.e magnification, resolution etc. should be supplied along with the system.		



14.	Image Processing Software	14.1	Image processing functions such as image averaging, integration, pseudo colour etc should be included.		
		14.2	Two-division and four-division image display should also be possible.		
		14.3	The digital images should have resolution 1280x1024 pixels or better and should be saved in BMP, TIFF or JPEG format.		
		14.4	Linewidth and particle size measurement capability must be included.		
15.	Computer System	15.1	Latest compatible branded high speed computer core i7 or better with Windows 7 Profession with 8 GB or more RAM with dual full HD monitors of size with 21 inch sized or greater RAID hard disc system with dual 1 TB hard drive systems, along with peripherals such as keyboard, mouse, high quality color laserjet with duplex multi-function printer with wi-fi capability etc. should be supplied along with the instrument.		
		15.2	All necessary software/s to operate the equipment should also be included.		
16.	Microanalysis (EDS) System	16.1	A microanalytical system, computer and software should be attached to the microscope for energy dispersive microanalysis.		
		16.2	It should detect and quantify all elements from Beryllium to Uranium and must have SDD crystal area of 50 mm <sup>2</sup> or more and a detector resolution of at least $Mn\alpha 127eV$ or better.		
		16.3	Must be an LN2 free system using vibration free thermoelectric Peltier cooling technology.		
		16.4	It should be capable of qualitative, quantitative and mapping analysis.		
17.	EDS Software	17.1	EDS software should be 100% compatible with Windows 7 and 64 bit Professional Operating System.		
		17.2	Data transfer to all parts of the software must be automatic and requires no user intervention.		
		17.3	The software must provide single button report generation with print preview, without the need to use third party word processing packages.		
		17.4	The software must allow for user-customizable reports.		
		17.5	Software screens must include bubble help to guide user systematically through required operations.		
		17.6	It must also provide automatic peak labeling during spectrum acquisition without the need for user intervention.		
		17.7	The software must provide quantitative analysis automatically using information from the microscope and qualitative analysis.		

		17.8	The system should be able to perform X-ray mapping for all elements from beryllium to uranium.		
		17.9	Quantitative analysis by either standard or standardless mode must be compatible.		
18.	Analytical Standards	18.1	Sets of elemental and oxide standards covering all geological analytical applications.		
19.	Safety Features	19.1	Protection features against vacuum, water and power must be provided.		
20.	Training and Installation	20.1	The supplier shall install and commission the system immediately after delivery.		
		20.2	System installation shall be carried out by factory trained engineers.		
		20.3	Training on the operation of the system by experienced and qualified engineer must be provided on-site at two levels: initial operational and maintenance training and after 6 months an advanced application training.		
21.	Warranty	21.1	One year standard warranty for parts and labour.		
		21.2	Optional two years extended warranty for parts and labour.		
		21.3	Quote for additional 5 years of AMC.		
22.	Spares and Consumables	22.1	Spares and consumables for two years of operation.		
		22.2	Operational manuals in English for all the equipments must be provided.		
23.	Optional Features and Accessories to be Quoted Separately	23.1	A cooling stage-temp range of -20°C to + 10°C.		

**TERMS AND CONDITIONS FOR SUBMISSION OF QUOTATION**

- 1) The National Centre for Antarctic and Ocean Research (NCAOR) invites sealed quotations in two-parts from the reputed firms for the **“SUPPLY, INSTALLATION, COMMISSIONING & TRAINING OF FIELD EMISSION SCANNING ELECTRON MICROSCOPE WITH EDS, LABE & BF-STEM DETECTORS.”** at NCAOR, GOA as per the specifications given in Annexure-I.
- 2) The technical and financial bids should be submitted in two separate sealed covers, super scribing “Part –I Technical Bid for **“SUPPLY, INSTALLATION, COMMISSIONING & TRAINING OF FIELD EMISSION SCANNING ELECTRON MICROSCOPE WITH EDS, LABE & BF-STEM DETECTORS,”**, Tender No., due date and “Part-II Financial bid for **“SUPPLY, INSTALLATION, COMMISSIONING & TRAINING OF FIELD EMISSION SCANNING ELECTRON MICROSCOPE WITH EDS, LABE & BF-STEM DETECTORS,”**, Tender No., due date. Both the bids should be kept in a single cover by super scribing tender for **“SUPPLY, INSTALLATION, COMMISSIONING & TRAINING OF FIELD EMISSION SCANNING ELECTRON MICROSCOPE WITH EDS, LABE & BF-STEM DETECTORS,”**, sealed and addressed to the **Director, National Centre for Antarctic & Ocean Research, Headland-Sada, Vasco-da-Gama, Goa – 403 804.**  
Offer sent through fax will not be accepted.
- 3) Overwriting and corrections should be attested properly. The bid should be complete in all respects and should be duly signed. **Incomplete and unsigned bids will not be considered at all.**
- 4) All relevant technical literature pertain to items quoted **with full specifications** (Drawing, if any), information about the products quoted, including brochures if any should accompany the quotation.
- 5) A list of **reputed clients** to whom the firm has supplied similar items to be furnished along-with the quotation.
- 6) Quotation should be **valid for a period of 90 days** from the date of tender opening and the period of delivery required should also be clearly indicated. If the supplier fails to deliver the goods within the time to be agreed upon, for delayed deliveries and for delays in installation (wherever applicable). NCAOR reserves the right to **levy liquidated damages** at the rate of 0.5% per week or part their of up to maximum of 5%.
- 7) **Commissioning** has to be completed within three months from the date of receipt of goods at NCAOR, Vasco, Goa, India.

8) The **warranty period** and the kind of **post-warranty support** should be indicated. Warranty shall commence from the date of installation and acceptance of the complete equipment supplied under the Purchase Order / Contract.

9) **Technical bid should contain EMD.**

**A) Foreign Bidders** shall submit **EMD** along with their tender **in the form of a bank guarantee** for a sum of US\$ 1750.00 (US\$ One Thousand Seven Hundred Fifty only) from any reputed bank (scheduled bank in India or foreign bank having operational Branch in India) initially valid for 180 days from the date of closing of the tender as per the proforma enclosed. This bank Guarantee in original shall be submitted along with the technical bid only.

**B) Indian Bidders** shall submit **EMD** along with their tender, **either By DD** drawn in favor of NCAOR, on any nationalized bank for a sum of ` 1,00,000 /- (Rupees One Lakh only) payable at Vasco-da-Gama only **or in the form of a bank guarantee** for a sum of ` 1,00,000 /- (Rupees One Lakh only) from any reputed bank (scheduled bank) initially valid for 180 days from the date of closing of the tender as per the proforma enclosed. This bank Guarantee in original shall be submitted along with the technical bid only.

**Tender without EMD in the envelope containing technical bid shall be summarily rejected.** The EMD of unsuccessful bidders shall be returned within 30 days of the award of contract.

The earnest money will be liable to be forfeited, if the tenderer withdraws or amends, impairs or derogates from the tender in any respect within the period of validity of his tender.

10) Please **specify the Make/Brand** and Name of the Manufacturer with address, country of origin and currency in which rates are quoted.

11) The Purchaser requires that the bidders suppliers and contractors observe the highest standard of ethics during the procurement and execution of such contracts. In pursuit of this policy, the following are defined:

“Corrupt practice” means the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence the action of a public official in the procurement process or in contract execution:

“fraudulent practice” means a misrepresentation or omission of facts in order to influence a procurement process or the execution of contract;

“collusive practice” means a scheme or arrangement between two or more bidders, with or without the knowledge of purchaser, designed to establish bid prices at artificial, noncompetitive levels; and

“coercive practice: means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the procurement process or affect the execution of contract;

The purchaser will reject a proposal for award if it determines that the Bidder recommended for award has, directly or through an agent, engaged in corrupt, fraudulent, collusive or coercive practices in competing for the contract in question; The Decision of Director, NCAOR shall be final and binding.

12) Bidders that doesn't manufacture the goods it offers to supply shall submit Manufacturer's Authorization form on the letterhead of the Manufacturer duly signed and stamped by a person with the proper authority to sign documents that are binding on the Manufacturer as per the following format should be submitted failing which the quotation will not be considered.

To  
The Director  
NCAOR  
GOA

Sub: Manufacturers' Authorization form against Tender No:\_\_\_\_\_

We \_\_\_\_\_(Name of the Manufacturer) who are official manufacturers of \_\_\_\_\_(Type of goods manufactured) having factories at \_\_\_\_\_(full address of Manufacturer's factories) do hereby authorize \_\_\_\_\_( Name of the Bidder) to submit a bid against your Tender No.\_\_\_\_\_for the \_\_\_\_\_Goods manufactured by us and to subsequently negotiate and sign the contract.

We hereby extend our full guarantee and warranty with respect to the Goods offered by the above firm

Manufacturer's Name:  
Signature of Authorized  
representative of the Manufacturer:

Duly authorized to sign this Authorization on behalf of : \_\_\_\_\_(Name of the Bidder)

Date:

In case the bidder not doing business within India, shall furnish the certificate to the effect that the bidder is or will be represented by an agent in India equipped and able to carry out the supply, maintenance, repair obligations etc., during the warranty and post warranty period or ensure a mechanism at place for carrying out the supply, maintenance, repair obligations etc., during the warranty and post- warranty period.

13) **The order acknowledgement** should be from the principals and if the Indian Agent is empowered to quote and to furnish order acknowledgement, a copy of agreement entered by you with the Indian Agent to be furnished.

14) **Compliance Statement:** Equipments point-by-point comparison/compliance statement with **technical specification** indicated in the tender, should be enclosed along with your tender as well as any other extra features of the equipment be shown separately therein and also **compliance statement for all commercial terms** of the tender document.

15) NCAOR is not entitled to issue form **"C/D"**. No Sales Tax or any other Tax shall be payable by us unless payment of the same is specifically mentioned by the suppliers in their bids and same is legally leviable.

16) To avail duty concessions i.e. **Excise Duty** as per Govt. notification 10/97 & **Custom Duty** as per Govt. notification 51/96, NCAOR will provide exemption certificates. Hence, the rates should be split into basic cost and Excise Duty if any.

17) **Technical Bid should contain** all details and specifications of the equipment offered, delivery schedule, warranty, payment term, installation, training, post-warranty, user-list, service support **WITHOUT PRICE** and **Financial bid should contain** details of the price(s) of the item(s) quoted in the technical bid. The Technical bid should not contain any references to the pricing.

**In case the technical bid contains any direct or indirect reference to quoted price the bid is liable to be rejected.**

The Prices shall be quoted in Indian Rupees for offers received for supply within India and in freely convertible foreign currency in case of offers received for supply from foreign countries.

For Goods manufactured in India:

18) In case of imported stores both **FOB and CIF prices upto Indian port of entry** namely Goa should be indicated. However tender should contain item-wise prices including total ex-works price, overall weight & dimensions of the equipment and cost of packing forwarding, approx. cost of air-freight charges for delivery up to Goa, India.

19) A Committee constituted by the Director, NCAOR for the purpose reserves the right to open the bids. Only technical bids will be opened on the date and time mentioned in the tender

document. The financial bids of those tenderers whose technical bids are found to be meeting our specifications only will be opened in their presence at date and time to be notified later.

20) The firm to the full satisfaction of the NCAOR should carry out the **installation and commissioning** at the NCAOR premises and the time-frame for the whole process should be specified in the technical bid.

21) A technical Committee constituted by the Director will assess the product supplied/installed for their quality and their conformity to the specifications provided by the firm in their quotations. Any item(s) identified by the Committee to be not as per the specifications or are found to be of inferior quality will be rejected, and the bills towards the supply will not be processed for payment till proper replacements are provided.

22) **No advance payment** will be made. Payment shall be made by **irrevocable letter of credit** after supply and acceptance of the equipment by NCAOR. The payment will be authorized after submission of a Bank Guarantee for 10% value of the order towards warranty guarantee. The **performance Bank Guarantee** should be furnished within 15 days from the date of placement of order from a reputed bank (scheduled bank in India **or** foreign bank operating in India) valid till 60 days after the warranty period.

23) If the quoted item needs to be imported then the undertaking needs to be produced from the original supplier stating that Post Warranty support will be provided from the original supplier to NCAOR on LC Terms of payment. If payment needs to be made and **spares will be supplied on the lowest rate quoted** than to any other customer with providing the sales price list to the NCAOR periodically as and when increase/decrease in prices.

24) Two sets of operational, service/troubleshooting manuals and diagrams to be supplied with **“SUPPLY, INSTALLATION, COMMISSIONING & TRAINING OF FIELD EMISSION SCANNING ELECTRON MICROSCOPE WITH EDS, LABE & BF-STEM DETECTORS”**.

25) **The submission of tender** shall be deemed to be an admission on the part of the tenderer, had fully acquainted with the specifications, drawings etc. and no claim other than what stated in the tender shall be paid in the event of award of Purchase Order.

26) Expenditure involved towards any extra materials required for labour involved for successful installation of the equipment, if not quoted for, would have to be borne by the tenderer.

27) **Acceptance of this tender** form and submission of the quote within the stipulated time would be treated as:

- a) The tenderer has understood all requirements as described in our Tender document.
- b) Acceptance to provide/establish all the facilities mentioned in our tender without any price escalation, if the tenderer finds it necessary to add any hardware or software or any other materials during implementation.
- c) Agreeing to execute order to the satisfaction of NCAOR or its authorized representatives within the stipulated time.

**28) Training / installation charges** should be clearly indicated including the scope of training.

29) Tender should clearly define the **infrastructure facilities required** for installation and commissioning of the equipment.

30) NCAOR will not be liable for any obligation until such time NCAOR has communicated to the successful bidder of its decision to release the Purchase Order.

**31) NCAOR will not be responsible for any postal delays.**

32) Bidders shall note that NCAOR will not entertain any correspondence or queries on the status of the offers received against this Tender Invitation.

33) Tenders from Manufacturers/Suppliers/Tenderers whose performance was not satisfactory in respect of quality of supplies and delivery schedules in any organizations, are liable for rejection. The tenders that do not comply with the above criteria and other terms & conditions are liable for rejection.

34) The Director, NCAOR does not bind to accept the lowest quotation and reserves the right to himself, to reject or partly accept any or all the quotations received without assigning any reason.



## QUESTIONNAIRE

- a. **Name of the Manufacturer / Tenderer.**
- b. **Full postal address with Telephone, Telefax, Email.**
- c. **Please specify whether Public Limited, Company, Private Organization or Partnership Firm.**
- d. **Nature of the Business.**
- e. **Date of Establishment.**
- f. **Present Turnover.**
- g. **Permanent Income Tax Ref. No.**
- h. **C.S.T. / S.T. NO.**
- i. **Address & Telephone Nos. Of your branch office in GOA (please specify whether Distributing/Servicing/Marketing the products).**
- j. **Reference of reputed Customers.**
- k. **Details of the highest order executed and value thereof.**
- l. **Authorization from Manufacturer/Supplier attached.**
- m. **Tender fee submitted/enclosed.**
- n. **E.M.D. attached with TECHNICAL BID.**
- o. **Infrastructure facilities required for installation & commissioning attached**
- p. **Technical Specifications/Literature/Brochure attached.**
- q. **Tender Acceptance.**

**TENDER ACCEPTANCE UNDERTAKING**

To

The Director,  
NCAOR, Headland Sada,  
Vasco – Goa.

Having examined the tender document for **“SUPPLY, INSTALLATION, COMMISSIONING & TRAINING OF FIELD EMISSION SCANNING ELECTRON MICROSCOPE**, we the undersigned hereby offer to supply the equipment in conformity with all specifications and conditions set out in the tender document.

We enclosed all the relevant documents as per the tender.

We understand that you are not bound to accept the lowest or any tender received.

**Date :**

**(Signature of Bidder)**

**Name :**

**Designation :**

Seal

**BANK GUARANTEE FORMAT FOR FURNISHING EMD****To****NATIONAL CENTRE FOR ANTARCTIC & OCEAN RESEARCH  
Headland Sada, Vasco-da-Gama, GOA 403 804, INDIA**

Whereas \_\_\_\_\_  
 (Hereinafter called the "tenderer"  
 has submitted their offer dated \_\_\_\_\_  
 for the supply of \_\_\_\_\_  
 (Herein after called the "tender"

WE \_\_\_\_\_ of having our registered office  
 At \_\_\_\_\_ are bound unto the NATIONAL  
 (Hereinafter called the Bank)

CENTRE FOR ANTARCTIC & OCEAN RESEARCH, Ministry of Earth Sciences, Govt. Of India having its office at Headland Sada, Vasco Goa 403 804, India (herein after called NCAOR which expression shall unless repugnant to the context or meaning thereof include all its successors, administrators, executors and assigns) in the sum of \_\_\_\_\_ for which payment will and truly to be made to. NCAOR, the Bank binds itself, its successors and assigns by these presents. Sealed with the common seal of the said Bank this \_\_\_\_\_ day of \_\_\_\_\_ 2014.

THE CONDITIONS OF THIS OBLIGATION ARE:

- 1) If the tenderer withdraws or amends, impairs or derogates from the tender in any respect within the period of validity of this tender.
- 2) If the tenderer having been notified of the acceptance of his tender by NCAOR during the period of its validity.
  - 2.a) If the tenderer fails to furnish the Performance security for the due performance of the contract.
  - 2.b) Fails or refuses to execute the contract

We undertake to pay NCAOR up to the above amount upon receipt of its first written demand, without NCAOR having to substantiate its demand, provided that in its demand the NCAOR will note that the amount claimed by it is due to it owing to the occurrence of one or both the two conditions, specifying the occurred condition or conditions.

This guarantee is valid until the \_\_\_\_\_ day of \_\_\_\_\_ 2014.

**Signature of the bank**

**NATIONAL CENTRE FOR ANTARCTIC & OCEAN RESEARCH**  
*(Ministry of Earth Sciences, Govt. Of India)*  
**Headland Sada, Vasco-da-Gama GOA 403 804, INDIA**  
**Tel: 91- (0) 832 2525571 Telefax: 91- (0) 832 2525573**  
**Email: [warlu62@ncaor.gov.in](mailto:warlu62@ncaor.gov.in) Website: [www.ncaor.gov.in](http://www.ncaor.gov.in)**

GLOBAL TENDER

Director, National Centre for Antarctic & Ocean Research (NCAOR) invites sealed tenders in two-parts (part I – Technical bid & part II Financial bid) super scribing Tender No. Item and due date from well established/ reputed manufacturers / authorized and bonafide vendors for supply of the following:-

Sl. No.	Tender No.	Item Description	Qty.	Cost of Tender Doc.		EMD	
					US\$		US\$
1	NCAOR/ LAB-2079/PT-22	SUPPLY, INSTALLATION, COMMISSIONING & TRAINING OF FIELD EMISSION SCANNING ELECTRON MICROSCOPE WITH EDS, LABE & BF-STEM DETECTORS	01	2000/-	50	1,00,000/-	1750.00

Last date for issue of tender documents : **27.01.2014**

Last date for submission of quotation : **28.01.2014**

The details of tender documents are also available in our website <http://www.ncaor.gov.in> and Central Public Procurement Portal <http://eprocure.gov.in>. Interested suppliers may download the details and submit the quotation on or before the due date along with tender fee.

**The quotation without tender fee will not be considered.**

Tender forms can be obtained from the Procurement section of NCAOR on all working days either by post or in person between 1000 – 1600 hours on payment of tender fees in the form of crossed Demand Draft payable at Vasco-da-gama only, from a Nationalized bank drawn in favor of NCAOR along with separate requisition indicating tender number and item. Tender forms can be obtained by speed post by remitting ` 50/- by Indian bidders and US\$ 15.00 by Foreign bidders in addition to the cost of tender documents.

The Director, NCAOR is not responsible for any transitional/postal delays.

The quotations will be **opened on 29.01.2014** in the presence of tenderers or their authorized representatives.

The Director, NCAOR reserves the right to accept or reject any quotation in full or part thereof without assigning any reason.

**Sd/-**  
**For & on behalf of NCAOR**