

**TENDER NO.**

**D-2/Equipment/2018-19/ TEM**

**dated**

**29.03.2019**

**(NIT.Ref.No. : 2019\_DoHR\_395593\_2)**

**Tender Documents**  
**For**  
**Supply of**  
**Transmission Electron**  
**Microscope**  
**at**  
**ICMR-NICED**  
**Kolkata**

**ICMR-National Institute of Cholera & Enteric Diseases**  
**P-33, C.I.T. Road, Scheme – XM, Beliaghata,**  
**Kolkata – 700 010**

Dated: 29.03.2019

Sealed Tender / Quotations are invited for supply of Laboratory Equipment at ICMR-NICED, Kolkata.

Sealed Tender, complete in all respect, duly signed with stamped of firm on each page including the tender should be dropped in the tender box, placed before the Despatch section (Dr. S.C. Pal Building) on 1<sup>st</sup> Floor on any working day from Monday to Friday within 11.30 a.m. to 5.30 p.m. Tender will be opened by Tender Opening Committee & in presence of tenderers or authorised representative.

**Important Instruction**

- i)** The cost of Tender Fee of **Rs. 2500/-** (Rupees Two Thousand Five hundred only ) [Non-Refundable] in the form of Demand Draft /Pay Order in favour of Director, NICED, Kolkata from any Nationalised Bank should be submitted along with the Technical Bid.
- ii)** The validity of tender will be one year from the date of approval of the Tender.
- iii)** The tenders must attach self-attested photocopies of latest and valid GST registration certificate and proof of filling Income Tax returns last 3 years and onwards. Failure to submit the same Tender will be invalid automatically. However Govt. of India / State Govt. Department and Public Sector Undertakings (Central/State) are exempted from submitting GST & Income Tax clearance certificate.
- iv)** Self-attested PAN card should be submitted.
- v)** Tender document duly signed with rubber seal of the firms in token of acceptance by the tenderer of all terms & conditions.
- vi)** Before submitting quotation party may contact, **Dr. N.S.Chatterjee, Scientist-F, Dr. Moumita Dutta, Scientist-C** for further information.

**Cost of Tender Fee Rs. 2500.00**

**(non-refundable)**

## **Tender Notice**

### **ICMR-National Institute Of Cholera & Enteric Disease**

P-33, C.I.T. Road, Scheme-XM, Beliaghata, Kolkata-700010.

Website- [www.niced.org.in](http://www.niced.org.in)

Telephone No. : 033-2353-6479, 2370-4478/5533.

Fax no. : 033-2370-5066, 2363 2398.

Email: [store.niced@icmr.gov.in](mailto:store.niced@icmr.gov.in) / [storeniced1@gmail.com](mailto:storeniced1@gmail.com)

**NIT. Ref. No. : 2019\_DoHR\_395593\_2**

Sealed Tenders are invited to execute of the following Laboratory Equipment at ICMR-N.I.C.E.D., Kolkata

<b>Sl. No.</b>	<b>Tender Code No.</b>	<b>Description</b>	<b>Estimated cost of the equipment (Rs. in lac)</b>	<b>EMD (Rs. in lac)</b>	<b>Last date of submission of bid (up to 1.30 P.M)</b>	<b>Date of opening (3.00 P.M)</b>
1.	D-2/Equipment/ 2018-19/TEM (NIT Ref No. 2019_DoHR_395593_2)	<b>Supply of “Transmission Electron Microscope”</b>	800 - 850	16	15.05.2019	15.05.2019

### **Expression of Interest Documents (EOI)**

Sealed quotations are invited from eligible vendors supplying equipment with Govt. of India/ Govt. of West Bengal/Autonomous bodies of Govt. of India/any reputed public limited company. Vendors must have vast knowledge and expertise in setting up of GLP/R & D Lab facility in India having their own engineering consultant/architect with similar laboratory setup experience.

## INDEX

Sl. No.	Description	Page
1	Introduction	7
2	Calendar Event	8
3	Type and Nature of Work	9
4	Submission of EOI	14
5	General Terms & Conditions	15

## **INTRODUCTION**

ICMR-National Institute of Cholera & Enteric Diseases (**ICMR-NICED**), Kolkata is a premiere Institute of Indian Council of Medical Research and engaged for significant research work on Diarrhoeal diseases and others infectious diseases. ICMR-NICED is publishing scientific papers with high impact factors and contributing to development of manpower. Collaborative research with various national and international organizations is other scope of activities of ICMR-NICED.

It is an Autonomous body funded by Govt. of India under Department of Health Research, Ministry of health & family welfare.

## **CALENDER EVENT**

<b>Date of Issue of Documents</b>	<b>24.04.2019</b>
<b>Last Date of Submission</b>	<b>15.05.2019 at 01.30 PM.</b>
<b>Place of Submission of EOI Documents</b>	<b>Tender Box kept on the 1<sup>st</sup> Floor, at ICMR-NICED-I Building.</b>
<b>Date of opening of Technical Bid</b>	<b>15.05.2019 at 03.00 PM.</b>
<b>Date of opening of Financial Bid</b>	<b>To be announced after Verification of Technical Documents</b>
<b>Place of opening of EOI Documents</b>	<b>Dr. B.C. Deb Auditorium at ICMR-NICED-I Building.</b>
<b>Address</b>	<b>P-33, C.I.T. Road, Scheme-XM, Beliaghata, Kolkata-700010.</b>
<b>Telephone No.</b>	<b>033-2370-5533/4478</b>



**Type and Nature of Work: Supply of “Transmission Electron Microscope” for research purpose.**

**Specification for Transmission Electron Microscope**

For the Electron Microscopy Facility of ICMR-NICED, Transmission Electron Microscope for conventional TEM, Single Particle Analysis and 3D Tomography at ambient and cryogenic temperatures for life science applications with accessories is required with the following specifications. The microscope will be used to conduct research in the areas of bacteriology, virology, cell biology and structural biology, and will involve the recording of images of unstained, rapidly-frozen thin films or negatively stained and ultrathin-sectioned biological material.

**1) Transmission Electron Microscope**

- i) **Accelerating Voltage:** Should be 80-200 kV (variable either in steps or continuous). The submitted documentation should clearly state the range of the system.
- ii) **Electron Source:** Schottky Field Emission Gun with energy spread of electron beam  $\leq 0.8\text{eV}$ . Life of Emitter should be at least three years or more.
- iii) **Resolution:** Point-to-point resolution = 0.30 nm or better. Lattice resolution = 0.18 nm or better.
- iv) **Magnification range:** 50x to 450,000x or higher range of magnification.
- v) **Lens system:** Four stage lens system (consisting of condenser lens, objective lens, polarization lens and stigmator lens) is preferred and all apertures must be motorized. However, constant power objective lens with low hysteresis is desirable. Also the system should have cryo pole piece. The lens system should provide distortion and rotation free images and the spherical aberration of objective lens should be 2.7 mm or lower.
- vi) **Specimen holders:** Single-tilt holder ( $\pm 70$  degree) for room temperature applications including tomography, a long duration cryo transfer and a high tilt cryo tomography holder ( $\pm 70$  degree or higher) of latest design for stable imaging should be provided with the system.
- vii) **Specimen chamber:** Eucentric Goniometer fully motorized stage with all 4 axes (XYZ $\alpha$ ) with accurate specimen position recall and retrieve facility. Specimen tilt angle should be at least  $\pm 70$  deg or higher. Drift should be  $\leq 1$  nm/minute with a standard holder. Specimen stage area should have long-term cryo stability.

- viii) **Vacuum system:** Should be equipped with fully automatic oil-free clean, ultrahigh differential pumping system with turbo molecular/ion pumps. The insertion of the specimen into the TEM vacuum via the air lock should be quick and easy, so that successive grids can be loaded. Suitable vacuum pump for Camera Section should be provided. Fully automatic sequential control for operation of vacuum pumps. FEG gun area vacuum should have pressure  $\leq 10^{-6}$  Pa and TEM column area vacuum should be  $\leq 10^{-4}$  Pa.
- ix) **Technology:** A latest generation technology model should be provided for both cryo and room temperature applications.
- x) **Imaging and operation:** The TEM should operate in the following modes - bright field, dark field, atomic resolution imaging and low/minimum dose. It should be possible to use well-established low-dose imaging procedures, in which there are separate pre-set Search/Focus/Exposure conditions.
- xi) **Software:** The TEM should be equipped with the latest software platform for the operation of the microscope. General image acquisition software for capturing images of standard negatively stained sample and ultrathin section samples should be provided. Updated and automated image acquisition software packages for single particle and tomography data collection (minimum incremental angle of 1 degree) with requisite license should be provided. The acquired data & metadata can be exported from the proposed TEM system in multiple formats (eg .mrc, .tiff, .jpeg, .txt, .xls etc). Offline data processing software with requisite license for single particle and tomography should be provided. Details of the proposed software should be included in the tender submission along with any known, or suspected, incompatibilities with other software packages. The software provided should be updated during annual servicing with available updates. The software provided is expected with full documentation.
- xii) **Automatic system:** It should be possible to align both electron gun and beam at selected acceleration voltages and recall that for automatic alignment while switching from one acceleration voltage to another. Automatic system that enables loading of samples with minimal breaks in vacuum is preferable.
- xiii) **Cryo transfer system:** Cryo-transfer station should be provided with the system, as required. All accessories for operation in cryo- as well as ambient temperature should be provided and switching between the two temperature conditions of operation should be simple and fast.
- xiv) **Instrument stability:** A robust system should be provided for maximum system stability, high throughput and protection from interference by an outer shell. Remote operation of the microscope should be possible.

- xv) **Instrument control:** The proposed TEM will be fitted with controls that are simple enough to be understood by a 'non-expert' user and robust enough for heavy daily use. The software controlling all detectors/cameras must be fully embedded into the TEM's operation system. The safety controls must be implemented in software as well as in hardware for protecting the operators, instrument, detectors and specimens. It should be possible to adjust easily and in a few minutes the gun voltage to any value between 80 and 200 kV.

## 2) Detector

The microscope should be equipped with the following detector/cameras with automatic capacity to exchange:

- i) **Direct Electron Detector:** Direct detection camera having the following minimum specs with DQE of 0.25 at 1/2 Nyquist or higher, Physical pixel size of 14µm or lower. Complete software for all camera functions, low dose readout and low dose automated data acquisition. Automated magnification calibration and adequate safety measures for camera should be available.
- ii) **CMOS Camera:** High Resolution retractable CMOS camera of minimum 4k x 4k pixel (16M pixel) full frame CCD with near 100 % fill factor. User-friendly software integrated with TEM system software along with measurement and diffraction analysis package as standard feature.  
Required PC/workstation should be provided for both cameras.

## 3) Vitrification Device

Vitrification system capable of blotting followed by rapid cooling of aqueous samples. The blotting should occur on both sides of the grid at the same time to allow even spreading/drying of the sample. Operational parameters should be reproducible and device should allow vitrification with high throughput with an easy and straightforward control of the vitrification process. It should be possible to control different parameters associated with the environment of the chamber and the blotting & plunging process.

**4) Cryo Preparation Tools**

Plasma cleaner, Cryo transfer station, cold stage controller, dry pumping stations and all cryo-tools etc. for holders should be provided.

**5) Computational Infrastructure for recording, storage and analysis**

- i) Adequate computational infrastructure for data recording, transfer and storage along with all required accessories should be provided with the system.
- ii) Computer with adequate capacity for acquiring and storage of direct detector generated data.
- iii) Separate workstations should be provided for offline data analysis/processing.
- iv) High Speed storage appliance with adequate capacity is preferred.

Overall, the computational infrastructure provided should allow smooth operation of the system and transfer, maintenance and analysis of the recorded data.

**6) Chiller, compressor and UPS**

Chiller, Compressor, UPS of adequate capacity (with at least 30 mins backup) to ensure smooth and noiseless operation of all components should be provided.

**7) Liquid Nitrogen Dewar**

It is expected to supply at least one 10L liquid nitrogen dewar, which will directly connect with the microscope for constant supply of liquid nitrogen to the microscope. Also small (approximately 2L capacity) and medium (approximately 5L capacity) liquid nitrogen dewars are to be provided.

- 8) Adequate consumables, spares (for at least three years) and tools should be provided.
- 9) The calibration standard for magnification and resolution should be supplied.

## **10) Warranty**

A minimum warranty period of 5 years is expected for the proposed TEM. All warranty certificates should be provided by the Principal Company. During the warranty period, ICMR-NICED will expect a maximum on-site attendance time of 24 (twenty-four) hours from first notification of a problem with the TEM.

## **11) Documents**

- i) List of research publications using the microscope should be provided.
- ii) List of installations of the quoted model in India and abroad should be provided.
- iii) The year of launch of the microscope should be provided.
- iv) A certificate of compliance has to be provided.
- v) It should be specified that the hardware components and the software meant to handle the microscope would not go obsolete for at least five years and the required spares would be available for at least ten years. A statement/letter to that effect may be included alongside the tender.

## **12) Training**

- i) On-site training at NICED on the operation of the proposed TEM will have to be provided by a qualified Application Specialist. If any specialised training is needed in manufacturer's factory/training academy, it has to be provided to the scientist/scientists concerned free of cost.
- ii) Initial training has to be provided to the EM department with the emphasis being on both theory and practical training to benefit from any advanced features of the TEM.
- iii) Initial maintenance training has to be also provided to technical staffs in the division of EM, allowing basic procedures to be carried out in-house to maximize the potential uptime of the proposed TEM.
- iv) Should any revised software or hardware be installed on the TEM, then appropriate user training will have to be carried out by the tenderer at the time of installation.
- v) The expectation is that the tenderer can provide on-going support to the system users and/or system maintenance personnel via a help desk, or similar arrangement, to maintain the optimal functionality and usability of the proposed TEM.
- vi) It is expected that comprehensive operational procedures and technical manuals will be provided for the proposed system(s).

## **13) Highly desirable optional item**

Phase plate: It is desirable that the system should be equipped with a hole free phase plate.

## SUBMISSION OF EOI

Total Documents Content in Two Envelopes:

**Envelope 1 Contain:** Notice Inviting EOI , Instruction for bidders, Terms & Condition, Obligation of Employer, Declaration of Tenderer, Credential – 1 core value in a single work order of same type of Govt. Biomedical Laboratory of National repute. Copy of License to be produced for contractor and works men. Electrical Supervisor License, ESI & EPF Registration Certificate, GST Registration Certificate & CST, **Bank Draft / Bankers Cheque No. with Date to be mentioned including the name of the Nationalized Bank**, Last 3 years Income Tax & Service Tax Clearance Certificate, Professional Tax certificate, current bank solvency certificate, Last 3 years Annual Turn Over should not be less than 10 Core Per Year. Agency must have vast knowledge and expertise in setting up of GLP/R & D Lab facility in India having their own engineering consultant/architect with similar laboratory setup experience with work order & completion certificate.

**Envelope 2 Contain:** Financial Bid Documents.

**Envelope 3 Contain:** Rs.16 lac or 2% as EMD of Quoted Amount in the form of Bank Draft on Nationalized Bank. Please note that **\*EMD** should be submitted in separate sealed envelopes in favor of the Director, NICED, Kolkata. **EMD** may also be accepted as bank guarantee as outlined in GFR rule 170 (i).

**Envelope 4 Contain:** Containing envelope 1, 2 & 3\* with superscripted with the Details address including the name of the work, tender no., address to the Director, ICMR-National Institute Of Cholera & Enteric Diseases, P-33, C.I.T. Road, Scheme –XM, Beliaghata, Kolkata 700010.

- **Tender Fee and EMD should be submitted in separate sealed envelopes in favor of the Director, NICED, Kolkata.**

## **GENERAL TERMS & CONDITIONS**

1. Soft copy in the form of CD for Technical & Price Bid separately (may be supplied) along with the hard copy.
2. The tender documents should be typed. Any cutting / overwriting may be signed by the tenderer otherwise the rates in r/o that particular item may not be considered.
3. Each and every page of the tender must be numbered and signed by the tenderer along with the seal of the firm.
4. Covering letter should clearly indicate the list of enclosures.
5. **Security deposit :**
  - A) The tenderer should submit **Bank Guarantee** from a **Nationalized Bank** of 10% of the cost of the equipment at the time of delivery of the Instrument.
  - B) Security deposit/EMD is liable to the forfeited if the tenderer fails to supply the store and fails to provide comprehensive warranty for equipment's, security deposit /EMD are liable to be forfeited if the tenderer with draws or awards or impairs or derogates the bid in any respect.
6. EMD shall be released to un-successful bidder after completion of tender process, subject to compliance to all other terms & conditions of Tender.
7. I) The bidder should clearly indicate the guarantee / warranty status of each item i.e. Main equipment, standard accessories, optional etc. (Consumables / non – consumable items etc.)  
II) **Current rate list of all replacements must be submitted in the price bid**
8. **THE RATES QUOTED WILL BE TAKEN AS FIRM AND FINAL.**
9. The tenderer are bound to supply the store during the validity of tender at the approved rate.
10. The firms may be asked to deliver the goods in instalment / fixed interval against the order of the full year. In case firm fails to deliver the particular instalments at its scheduled time, this office reserves the right to procure the item in the open market and the excess expenditure incurred will have to borne by the company.
11. For imported equipment ICMR general terms and conditions requires that the supply of the equipment has to be made within 90 days from the date of the order but it has been extended 270 days.

## **GENERAL TERMS AND CONDITIONS OF THE SUPPLY ORDERS**

1. The delivery of the goods has to be made to the concerned store as mentioned in supply order, strictly in accordance with the supply order & with the approved specification.
2. The supplies have to be made within 30 days from the date of despatch of the supply order failing which penalty will be imposed as per rule or cancellation of order and the Earnest money will be forfeited . However in exceptional circumstances and on written request the extension of the date of supply may be considered by the discretion of Director. For imported equipments / items the

delivery period shall be up to 90 days. In case the items are urgently required the firms will have to supply the items on urgent basis.

**3. Penalty clause:**

- A) FOR DELAYED SUPPLY: A penalty of 2% of the value of order per week will be imposed subject to maximum, of 10% of the value of order.
  - B) FOR NON SUPPLY: EMD of the firm will be forfeited and necessary action will be initiated.
4. Supplier must ensure that challan is submitted in the concerned store along with the supplies. The number and date of delivery challan must be indicated in the bill.
  5. Triplicate bills duly pre receipted on appropriate revenue stamp affixed to be submitted in the name of the Director in respective store.
  6. The bill should be in printed form having printed bill number, GST/PAN Number as well as D.L. No (whichever applicable)
  7. All rejected stores shall be at the risk of the supplier and must be removed immediately.
  8. Guarantee/ Warranty Certificate must be provided at the time of supply.
  9. In case it is a computer – generated bill it must have the seal of the firm affixed on it.

**Payment**

Payment will be made only after the receipt of the items in good condition as per specification against the order through Letter of Credit (L/C) i.e. 90% against shipment and 10 % after successful installation and commissioning at user's end and acceptance of the user.

**Delivery**

CIF Kolkata has to be mentioned.

**EXCLUSIVE RIGHT OF THE DIRECTOR**

The Director, ICMR-NICED, Kolkata has the full and exclusive right to accept or reject any or all the tenders without assigning any reasons whatsoever. No enquires, verbal or written shall be entertained in respect of acceptance / rejection of the tender.

Store in Charge  
**For Director**