

# Online Bids

(through E-Procurement Portal of CPPP)

are invited

*for*

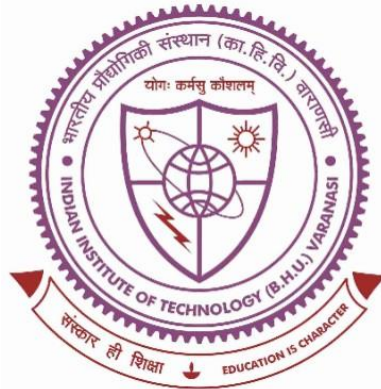
## ***Supply, installation, demonstration of Analytical Transmission Electron Microscope and Ion Beam Milling System***

**Tender No.: IIT (BHU)/Met-JB/DST-FIST/2024-25/01 Dated 09-04-2024**

**Publishing Date: 17.04.2024**

**Last Date of Submission: 15.05.2024**

**Tender opening date: 16.05.2024**



**Department of Metallurgical Engineering  
Indian Institute of Technology  
(Banaras Hindu University)  
Varanasi-221005**

**E-mail: [jbasu.met@iitbhu.ac.in](mailto:jbasu.met@iitbhu.ac.in)**

**INDIAN INSTITUTE OF TECHNOLOGY  
(BANARAS HINDU UNIVERSITY)  
VARANASI – 221005**

**DEPARTMENT/SCHOOL/CENTRE: DEPARTMENT OF METALLURGICAL ENGINEERING, IIT (BHU)**

**GLOBAL TENDER ENQUIRY DOCUMENTS**

**(NOTICE INVITING TENDER)**

IIT (BHU) Varanasi invites online tender from manufacturers (or their 'authorized' dealers that they have been authorized to quote in response to this NIT) of the following items are invited:

<b>Sl. No.</b>	<b>Tender No. and Last Date</b>	<b>Specifications &amp; Quantity of the item</b>	<b>Earnest Money Deposit to be submitted</b>
1.	<b>IIT (BHU)/Met-JB/DST-FIST/2024-25/01 Dated 09-04-2024</b>	As per Annexure I	Bid Security Declaration Form as per as per Annexure-VII

Tender Documents may be downloaded from Central Public Procurement Portal <http://eprocure.gov.in/eprocure/app>. Tenderers can access tender documents on the CPP Portal. Select the appropriate tender and fill them with all relevant information and submit the completed tender document online on the website <http://eprocure.gov.in/eprocure/app> as per the schedule given in the next page.

Aspiring Bidders who have not enrolled / registered in e-procurement should enroll / register before participating through the website <http://eprocure.gov.in/eprocure/app>. The portal enrolment is free of cost. Bidders are advised to go through instructions provided at 'Instructions for online Bid Submission'.

**No manual bids will be accepted. All quotation (both Technical and Financial should be submitted in the E- procurement portal).**

The Tender should be addressed to **Dr. Joyusrya Basu, Principal Investigator, Project No: R&D/SA/DST-FIST/Met/Scm./20-21/01, Department of Metallurgical Engineering, IIT (BHU), Varanasi-221005, U.P.**, and should be submitted online on or before the date and time of Bid closing date as mentioned in critical date sheet.

*The Institute shall not be responsible for any delay in submitting online Bids. The Institute reserves the right to accept or reject any bid, cancel the Tender without assigning any reason thereof. No correspondence in this regard will be entertained.*

**Dr. Joysurya Basu**  
**Principal Investigator**  
**Project No: R&D/SA/DST-FIST/Met/Scm./20-21/01**  
**Department of Metallurgical Engg,**  
**IIT (BHU), Varanasi-221005**

**INDIAN INSTITUTE OF TECHNOLOGY  
(BANARAS HINDU UNIVERSITY)  
VARANASI – 221005**

**DEPARTMENT/SCHOOL/CENTRE: DEPARTMENT OF METALLURGICAL ENGINEERING, IIT (BHU)**

**TENDER FOR SUPPLY, INSTALLATION, DEMONSTRATION OF PART A: Analytical  
Transmission Electron Microscope & PART B: Ion Beam Milling System**

**CRITICAL DATA SHEET**

Name of Organization	Indian Institute of Technology (Banaras Hindu University), Varanasi-221005, UP
	Global
Type/Form of Contract (Work/Supply/ Auction/ Service/ Buy/ Empanelment/ Sell)	SUPPLY
Date of Issue/Publishing Original Tender	17.04.2024 (06.00 PM)
Document Download Start Date	17.04.2024 (06.00 PM)
Document Download End Date	15.05.2024 (04.00 PM)
Pre Bid Meeting Date* *Queries, if any, to be discussed, MUST be emailed to <a href="mailto:jbasu.met@iitbhu.ac.in">jbasu.met@iitbhu.ac.in</a> , before the date of Pre Bid meeting for consideration.	30.04.2024 at 03:00 pm Department of Metallurgical Engineering Indian Institute of Technology (Banaras Hindu University) Varanasi-221005
Corrigendum, if any	--
Last Date and Time for Uploading of Bids	15.05.2024 (04.00 PM)
Date and Time of Opening of Technical Bids	16.05.2024 (04.00 PM)
Tender Processing Fee (including GST as applicable )	Rs. 23,600/- (For Tender Processing Fee) (To be paid through RTGS/NEFT) as per the following details:
EMD (Bid Security Declaration Form as per as per Annexure-VII)	Name of Account - Registrar, IIT(BHU) Name of the Bank - State Bank of India Name of Branch - IT, BHU, Varanasi Account No. - 32778803937 IFSC Code - SBIN0011445 <b>The proof of payment must be enclosed with Technical Bid. Tender processing fees &amp; Bid Security Declaration Form.</b>
No. of Covers (1/2/3/4)	02
Bid Validity days	270 days (From last date of opening of tender)
Address for Communication	<b>Dr. Joysurya Basu</b> <b>Principal Investigator</b> <b>Project No: R&amp;D/SA/DST-FIST/Met/Scm./20-21/01</b> Department of Metallurgical Engineering Indian Institute of Technology (Banaras Hindu University) Varanasi-221005
Contact No. & E-mail Address	<a href="mailto:jbasu.met@iitbhu.ac.in">jbasu.met@iitbhu.ac.in</a>

**INDIAN INSTITUTE OF TECHNOLOGY  
(BANARAS HINDU UNIVERSITY)  
VARANASI – 221005**

**DEPARTMENT/SCHOOL/CENTRE: DEPARTMENT OF METALLURGICAL ENGINEERING,  
IIT (BHU)**

**TENDER FOR SUPPLY, INSTALLATION, DEMONSTRATION OF Analytical Transmission  
Electron Microscope & Ion Beam Milling System**

**INVITATION FOR BIDS**

1. Online bids are invited from eligible bidders for the following:

<b>Sl. No.</b>	<b>Tender no.</b>	<b>Specifications &amp; quantity of the item</b>	<b>Earnest Money Deposit (EMD)</b>
<b>1.</b>	<b>IIT (BHU)/Met-JB/DST-FIST/2024-25/01 Dated 09-04-2024</b>	As per Annexure I	Bid Security Declaration Form as per as per Annexure-VII

2. Interested eligible Bidders may obtain further information from IIT (BHU) website: <https://www.iitbhu.ac.in/tenders> or from Central Public Procurement Portal (CPPP) <https://eprocure.gov.in/eprocure/app>.
3. Intending bidders are advised to visit IIT (BHU) website <https://www.iitbhu.ac.in/tenders> and CPPP website <https://eprocure.gov.in/eprocure/app> regularly till closing date of BID submission of tender for any corrigendum / addendum/ amendment.
4. Tender Processing Fee is to be deposited electronically by RTGS/NEFT in the account of Registrar, IIT (BHU) in the Bank details mentioned above. Bidders are required to submit the scan copy of payment receipt details of Tender processing fees payment at the time of Bid Preparation.
5. This Tender Document contains the following:
- A.** Instructions for Online Bid Submission
  - B.** Instruction to Bidders
  - C.** General conditions of contract (GCC)
  - D.** Special Condition of Contracts
  - E.** Check-list for Bid/Tender submission
  - F.** Declaration Certificate
  - G.** Technical specifications for the complete project (Annexure 1)
  - H.** Compliance Sheet

**SECTION 1: INSTRUCTION FOR ONLINE BID SUBMISSION**

As per the directives of Department of Expenditure, this tender document has been published on the Central Public Procurement Portal (<http://eprocure.gov.in/eprocure/app>). The bidders are required to submit soft copies of their bids electronically on the CPP Portal, using valid Digital Signature Certificates. The instructions given below are meant to assist the bidders in registering on the CPP Portal, prepare their bids in accordance with the requirements and submitting their bids online on the CPP Portal.

More information useful for submitting online bids on the CPP Portal may be obtained at:  
<http://eprocure.gov.in/eprocure/app>.

## **1. Registration**

1. Bidders are required to enroll on the e-Procurement module of the Central Public Procurement Portal (URL:<http://eprocure.gov.in/eprocure/app>) by clicking on the link “Click here to Enroll”. Enrolment on the CPP Portal is free of charge.
2. As part of the enrolment process, the bidders will be required to choose a unique username and assign a password for their accounts.
3. Bidders are advised to register their valid email address and mobile numbers as part of the registration process. These would be used for any communication from the CPP Portal.
4. Upon enrolment, the bidders will be required to register their valid Digital Signature Certificate (Class II or Class III Certificates with signing key usage) issued by any Certifying Authority recognized by CCA India (e.g. Sify / TCS / nCode / eMudhra etc.), with their profile.
5. Only one valid DSC should be registered by a bidder. Please note that the bidders are responsible to ensure that they do not lend their DSCs to others which may lead to misuse.
6. Bidder then logs in to the site through the secured log-in by entering their user ID / password and the password of the DSC / eToken.

## **2. Searching for Tender Documents**

1. There are various search options built in the CPP Portal, to facilitate bidders to search active tenders by several parameters. These parameters could include Tender ID, organization name, location, date, value, etc. There is also an option of advanced search for tenders, wherein the bidders may combine a number of search parameters such as organization name, form of contract, location, date, other keywords etc. to search for a tender published on the CPP Portal.
2. Once the bidders have selected the tenders they are interested in, they may download the required documents / tender schedules. These tenders can be moved to the respective ‘My Tenders’ folder. This would enable the CPP Portal to intimate the bidders through SMS / e-mail in case there is any corrigendum issued to the tender document.
3. The bidder should make a note of the unique Tender ID assigned to each tender, in case they want to obtain any clarification / help from the Helpdesk.

## **3. Preparation of Bids**

1. Bidder should take into account any corrigendum published on the tender document before submitting their bids.
2. Please go through the tender advertisement and the tender document carefully to understand the documents required to be submitted as part of the bid. Please note the number of covers in which the bid documents have to be submitted, the number of documents - including the names and content of each of the document that need to be submitted. Any deviations from these may lead to rejection of the bid.
3. Bidder, in advance, should get ready the bid documents to be submitted as indicated in the tender document / schedule and generally, they can be in PDF / XLS / RAR / DWF formats. Bid documents may be scanned with 100 dpi with black and white option.
4. To avoid the time and effort required in uploading the same set of standard documents which are required to be submitted as a part of every bid, a provision of uploading such standard documents (e.g. PAN card copy, annual reports, auditor certificates etc.) has been provided to the bidders. Bidders can use “My Space” area available to them to upload such documents. These documents may be directly submitted from the “My Space” area while submitting a bid, and need not be uploaded again and again. This will lead to a reduction in the time required for bid submission process.

#### **4. Submission of Bids**

1. Bidder should log into the site well in advance for bid submission so that he/she upload the bid in time i.e. on or before the bid submission time. Bidder will be responsible for any delay due to other issues.
2. The bidder has to digitally sign and upload the required bid documents one by one as indicated in the tender document.
3. Bidder has to select the payment option as “on-line” to pay the tender fee / EMD as applicable and enter details of the instrument. Whenever, EMD / Tender fees is sought, bidders need to pay the tender fee / EMD separately on-line through RTGS.
4. A standard BoQ format has been provided with the tender document to be filled by all the bidders.  
Bidders are requested to note that they should necessarily submit their financial bids in the format provided and no other format is acceptable. Bidders are required to download the BoQ file, open it and complete the white coloured (unprotected) cells with their respective financial quotes and other details (such as name of the bidder). No other cells should be changed. Once the details have been completed, the bidder should save it and submit it online, without changing the filename. If the BoQ file is found to be modified by the bidder, the bid will be rejected.
5. The server time (which is displayed on the bidders’ dashboard) will be considered as the standard time for referencing the deadlines for submission of the bids by the bidders, opening of bids etc. The bidders should follow this time during bid submission.
6. All the documents being submitted by the bidders would be encrypted using PKI encryption techniques to ensure the secrecy of the data. The data entered cannot be viewed by unauthorized persons until the time of bid opening. The confidentiality of the bids is maintained using the secured Socket Layer 128 bit encryption technology. Data storage encryption of sensitive fields is done.
7. The uploaded tender documents become readable only after the tender opening by the authorized bid openers.
8. Upon the successful and timely submission of bids, the portal will give a successful bid submission message & a bid summary will be displayed with the bid no. and the date & time of submission of the bid with all other relevant details.
9. Kindly add scanned PDF of all relevant documents in a single PDF file of compliance sheet.

#### **5. Assistance to Bidders**

10. Any queries relating to the tender document and the terms and conditions contained therein should be addressed to the Tender Inviting Authority for a tender or the relevant contact person indicated in the tender.
11. Any queries relating to the process of online bid submission or queries relating to CPP Portal in general may be directed to the 24x7 CPP Portal Helpdesk.

#### **6. General Instructions to the Bidders**

12. The tenders will be received online through portal <http://eprocure.gov.in/eprocure/app> . In the Technical Bids, the bidders are required to upload all the documents in **.pdf format**.
13. Possession of a Valid Class II/III Digital Signature Certificate (DSC) in the form of smart card/e-token in the company's name is a prerequisite for registration and participating in the bid submission activities through <https://eprocure.gov.in/eprocure/app>. Digital Signature Certificates can be obtained from the authorized certifying agencies, details of which are available in the web site <https://eprocure.gov.in/eprocure/app> under the link “Information about DSC”.
14. Tenderer are advised to follow the instructions provided in the ‘Instructions to the Tenderer for the e-submission of the bids online through the Central Public Procurement Portal for e Procurement at <https://eprocure.gov.in/eprocure/app>.

## **SECTION 2: INSTRUCTIONS TO BIDDERS**

### **A. Introduction**

#### **1. Scope of Work**

#### **TENDER FOR SUPPLY, INSTALLATION, DEMONSTRATION OF Analytical Transmission Electron Microscope & Ion Beam Milling System**

#### **2. Cost of Bidding**

The Bidder shall bear all costs associated with the preparation and submission of its bid, and "the Purchaser", will in no case be responsible or liable for these costs, regardless of the conduct or outcome of the bidding process.

### **B. The Bidding Documents**

#### **3. Tender Processing Fees**

The Tender Processing fees (Rs. 23,600.00) should be submitted ONLINE as per the details mentioned above. Further, the proof of payment must be uploaded with Technical Bid. The exemption will be applicable as per Govt. of India norms.

#### **4. Content of Bidding Documents**

The goods required, bidding procedures and contract terms are prescribed in the bidding documents.

In addition to Invitation of Bids, the bidding documents include:

- (a) Instructions for Online Bid Submission
- (b) Instruction to Bidders (ITB);
- (c) General Conditions of Contract (GCC);
- (d) Special Conditions of Contract (SCC)
- (d) Schedule of requirements;
- (e) Tender form (technical bid).
- (f) Tender form (financial bid)

The Bidder is expected to examine all instructions, forms, terms, and specifications in the bidding documents. Failure to furnish all information required by the bidding documents or submission of a bid not substantially responsive to the bidding documents in every respect will be at the Bidder's risk and may result in rejection of its bid.

#### **5. Amendment of Bidding Documents**

At any time prior to the deadline for submission of bids, the Purchaser may, for any reason, whether at its own initiative or in response to a clarification requested by a prospective bidder, modify the bidding documents by amendment.

All prospective bidders who have received the bidding documents will be notified of the amendment in writing, which will be binding on them.

In order to allow prospective bidders reasonable time within which to take the amendment into account in preparing their bids, the Purchaser, at its discretion, may extend the deadline for the submission of bids.

### **C. Preparation of Bids**

#### **6. Language of Bid**

The bid prepared by the Bidder, as well as all correspondence and documents relating to the bid exchanged by the Bidder and the Purchaser shall be written in English language.



## 7. Documents Comprising the Bid

**Techno commercial un-priced bid and priced Bids:** The bids are to be submitted in two parts i.e. Techno commercial un-priced bid and priced Bids.

(a) Techno commercial un-priced bid along with Tender Processing Fee (submitted ONLINE in the aforementioned bank account of Institute) as shown in invitation to bids shall be submitted through CPP Portal. If the proof of payment of Tender Processing Fee and Bid Security Declaration Form as per Annexure-VII is not received along with the technical bid, such bid will not be considered. The samples (if required) of all the items shown in the schedule of requirements of each tender should also accompany the techno commercial un-priced bid in a separate sealed envelope.

(b) Priced bid.

**Techno commercial un-priced bid:** The Techno commercial un-priced bid prepared by the bidder shall be provided in the following Model Response format:

### Model Response format

- (a) Standing of each Bidder Manufacturer/Dealer and past experience in supply of the material (certificates to be enclosed), proof of manufacturing Unit/Dealership alongwith all the documents required for proving the credentials regarding the fulfillment of essential pre-bid criteria.
- (b) List of other IITs/NITS/Govt. Offices/PSUs/Govt. Funded Universities/ Govt. Funded Autonomous Bodies/Govt. Bodies/ Deemed University for which the bidder has supplied or supplying material or having the similar type of contracts and a certificate regarding the satisfactory performance of the contract (In the Annexure III format).
- (c) Copy of the audited balance sheet of the Bidder for the previous financial year indicating the turnover in supply of the relevant materials/service.
- (d) Details of Permanent Account Number and latest income tax clearance certificate.
- (e) Details of GST No. along with a copy of certificate to be attached.
- (f) Submission of samples if required, for all items indicated in the schedule of requirements. The make of items proposed to be supplied should be indicated in the format of the schedule of requirements and submitted along with the techno commercial un-priced bid without indicating the pricing components.
- (g) Willingness to execute all orders which are placed to meet emergency requirement on priority basis. The Bidder shall note that standards for workmanship, material and equipment, and references to brand names designated by the Purchaser in the schedule of requirements are intended to be descriptive only and not restrictive. The Bidder may substitute alternative standards, brand names and/or catalogue numbers in his bid, provided that it demonstrates to the Purchaser's satisfaction that the substitutions ensure substantial equivalence to those designated in the Technical Specifications.

### Price Bid

The price bid shall comprise the techno commercial bid along with the price component indicating the Unit prices for each and every item indicated in the schedule of requirements (Annexure I).

- (a) The prices quoted must be net per unit as shown in the Schedule and must include all charges for delivery at the designated stores i.e. F.O.R., IIT (BHU), Varanasi and should be mentioned clearly.
- (b) The rate must be stated for each item separately both in words and figures. If there is a discrepancy between the price quoted in word and figures the higher price quoted will be treated as final.
- (c) Quoted prices should be firm and inclusive of all taxes/duties, freight and forwarding charges,



handling charges, loading and unloading charges, and insurance charges etc. However, the prices must be reflected clearly in BoQ format by mentioning basic rate, GST, Freight charges, Any other Taxes/Duties/Levies and exemptions thereon as applicable to IITs.

- (d) Further, if required the Institute will make direct payment to Custom Department against receipt of Challan from the supplier.
- (e) The prices once accepted by the Institute shall remain valid till the successful execution of the order and till supplies is fully effected and accepted or **270 days** from the date of acceptance of tender whichever is later. The Institute shall not entertain any increase in the rates during the period. However, in the event there is a reduction or increase in Government levy/duties/taxes during the period of execution of the order, the rates shall be suitably adjusted with effect from the date notifying the said reduction or increase in the Government levy/taxes/duty, if any.

## **8. Bid Prices**

The Bidder shall indicate on the Schedule of requirements (BoQ), the unit prices of the goods it proposes to supply under the Contract and enclose it with the priced bid.

Prices indicated on the Price Schedule shall be entered separately in the following manner:

- (i) The prices quoted must be net per unit as shown in the schedule of requirements and must include all charges for delivery at the designated stores.
- (ii) Any Indian duties, GST and other taxes which will be payable on the goods, if this Contract is awarded;

Prices quoted by the Bidder shall be fixed during the Bidder's performance of the Contract and not subject to variation on any account.

## **9. Clarification regarding Price Bid and BoQ**

- (a) In case of import, the order will be placed to OEM and LC will also be opened in favour of OEM.
- (b) In case of import, the bidder is not required to quote the rate for Custom Duty charges and IGST thereof. The Institute will make direct payment to Custom Department as per actual against receipt of Challan from the bidder. The Institute will issue CDEC certificate as and when required.
- (c) The bidder is required to quote the rate for Freight charges, insurance etc. in INR.
- (d) The clearance of shipment from Custom, its safely delivery, installation and demonstration at IIT (BHU) site shall be the sole responsibility of bidder/their authorized agent.
- (e) The Institute will provide all the necessary documents as and when required to bidder for clearance of shipment. However, bidder has to intimate the requirement of same in well advance.

## **10. Bid Currencies**

Prices shall be quoted in **Indian Rupees/USD/EURO** only.

## **11. Period of Validity of Bids**

Bids shall remain valid for **270** days after the date of bid opening prescribed by the Purchaser. A bid valid for a shorter period shall be rejected by the Purchaser as non-responsive.

In exceptional circumstances, the Purchaser may solicit the Bidder's consent to an extension of the period of validity. The request and the responses thereto shall be made in writing. A Bidder granting the request will not be required nor permitted to modify the bid.

Bid evaluation will be based on the bid prices without taking into consideration the above modifications.

## **D. Submission of Bids**

- 12.** The tender has to be submitted ONLINE before the due date. The offers received after the due date and time will not be considered. **No manual bids will be considered.**

### **13. Deadline for Submission of Bids**

Bids must be received by the Purchaser ONLINE not later than the time and date specified in the Invitation for Bids.

The Purchaser may, at his discretion, extend this deadline for submission of bids by amending the bid documents in which case all rights and obligations of the Purchaser and Bidders previously subject to the deadline will thereafter be subject to the deadline as extended.

### **14. Late/Delayed Bids**

The offers received after the due date and time will not be considered.

### **15. Modifications and Withdrawal of Bids**

The Bidder may modify or withdraw its bid after the ONLINE bid's submission, as per the provision of CPP Portal.

No bid may be modified subsequent to the deadline for submission of bids. No documents will be accepted in support of essential pre-bid criteria after the last date of submission of bids.

No bid may be withdrawn in the interval between the deadline for submission of bids and the expiry of the period of bid validity specified by the Bidder on the bid form.

## **E. Bid Opening and Evaluation of Bids**

### **16. Opening of Techno commercial un-priced Bids**

The purchaser will open all techno commercial un-priced bids in the first instance.

### **17. Clarification of Bids**

During evaluation of the bids, the purchaser may, at its discretion, ask the Bidder for clarification of its bid. The request for clarification and the response shall be in writing and no change in price or substance of the bid shall be sought, offered or permitted.

No Bidder shall contact the purchaser on any matter relating to its bid from the time of the bid opening to the time the contract is awarded. If the Bidder wishes to bring additional information to the notice of the Institute, it should be done in writing.

Any effort by a Bidder to influence the purchaser in its decisions on bid evaluation, bid comparison or contract award decisions may result in rejection of the Bidder's bid.

### **18. Evaluation of Techno commercial un-priced Bid**

Prior to the detailed technical evaluation, the purchaser will determine the substantial responsiveness of each bid. A substantially responsive bid is one, which conforms to all the terms and conditions of the Bidding Documents without material deviations and meets all the essential pre-bid criteria. If any bidder does not meet the essential pre-bid criteria as laid down in the Instruction to Bidders, then his bid will be summarily rejected. No documents will be accepted in support of essential pre-bid criteria after the last date of submission of bids.

The purchaser will reject a bid determined as not substantially responsive.

The bidders may be called for discussion and may be allowed to modify their technical bids to suit the organization's requirement. The idea is to arrive at a threshold level of acceptability above which all the bidders shall be treated on par. Those whose technical specifications do not reach the threshold level of acceptability shall be rejected as technically unsuitable. The price bids of the bidders who finally emerge as technically acceptable shall be opened, evaluated and the contract awarded to the lowest evaluated bidder.

The bidders short-listed by the purchaser based on meeting the essential pre-bid criteria and detailed evaluation regarding satisfying the technical criteria laid down in this tender document may be called for detailed discussions with a team selected for the purpose, at a specified date, time and venue, if

needed.

## **19. Opening of Priced Bids**

The Purchaser will open the Priced Bids of only those bidders who meet the essential pre-bid criteria and whose techno commercial un-priced bids have been found to be substantially responsive.

The priced Bids of the technically qualified bidders shall be opened by the tender committee.

## **20. Evaluation and Comparison of priced Bids**

Arithmetical errors will be rectified on the following basis: If there is a discrepancy between words and figures, whichever is the higher of the two shall be taken as bid price. If the Bidder does not accept the correction of errors, its bid will be rejected

Bidders shall state their bid price for the payment schedule outlined in the Clause 14 of General Conditions of Contract. Bids will be evaluated on the basis of this base price. Bidders are, however, permitted to state an alternative payment schedule and indicate the reduction in bid price they wish to offer for such alternative payment schedule. The purchaser may consider the alternative payment schedule offered by the selected Bidder but it may not be binding on the purchaser.

The purchaser, at its option may ask some more bidders to match the rates of the lowest bidder for creating parallel suppliers.

The currency that shall be used for bid evaluation and comparison purposes to convert all bid prices expressed in various currencies into a single currency is: **Indian Rupees/USD/EURO.**

The source of exchange rate shall be: **Reserve Bank of India/Any other authentic source.**

The date for the exchange rate shall be: **Last day for submission of Bids.**

## **21. Purchasers right to accept any bid and to reject any bid or all bids**

The Purchaser reserves the right to accept or reject any bid, and to annul the bidding process and reject all bids at any time prior to award of Contract, without thereby incurring any liability to the affected Bidder or bidders or any obligation to inform the affected Bidder or bidders of the grounds for the Purchaser's action.

## **22. Award Criteria**

- i. IIT (BHU) shall award the contract to the technically qualified eligible BIDDER whose bid has been determined as the lowest evaluated commercial bid.
- ii. In case of abnormally high and abnormally low quoted price, the bidder will be rejected outrightly.

## **23. Notification of Award**

Prior to the expiration of the period validity, the purchaser will notify the successful Bidder in writing by letter or by fax, to be confirmed in writing by speed post or hand delivered letter, that its bid has been accepted.

## **24. Factors Affecting the Award of Supply**

The bidder should have its own Contract support facilities. The support facilities should be fully owned and managed by the bidder.

Conformity with the Request for Bid/Tender required and conditions.

The assessment based on the response to Model Response Outline.

The assessment of the capability of the bidder to meet the terms and conditions.

The bidders must have executed similar orders, for which the bidder is quoting, as indicated in clause 1 for IITs/NITS/Govt. Offices/PSUs/Govt. Funded Universities/ Govt. Funded Autonomous Bodies/Govt. Bodies/ Deemed University.

The cost and the discount offered, if any.

## **25. Fall clause**

The price quoted by the supplier should not be higher than the maximum retail price, if any, for the stores and the same shall not be higher than the price usually charged by the supplier for stores of the same nature, class or description to any other purchaser.

The price charged for the stores supplied under the contract by the supplier shall in no event exceed the lowest price at which the supplier sells the stores of identical description to any other person during the period till performance of all supply orders placed during the currency of the contract is completed. If at any time during the period the supplier reduces the sale price of such stores or sells such stores to any other person including his dealers at a price lower than the price chargeable under the contract, he shall forthwith notify such reduction or sale to the purchaser and the price payable under the contract for these items of stores supplied after the date of coming into force of such reduction or sale shall stand correspondingly reduced.

If it is discovered that the supplier has contravened the above conditions, then without prejudice to any other action which might be taken against him, it shall be lawful for the purchaser to (a) revise the price at any stage so as to bring it in conformity with sub-clause(i) above, or (b) to terminate the contract and purchase the items of stores at the risk and cost of the supplier and in that event the provisions of Clause 28 of General Conditions of Contract shall, as far as possible, be applicable or recover the loss.

## **SECTION 3 : GENERAL CONDITION OF CONTRACTS**

### **1. Definitions**

In this Contract, the following terms shall be interpreted as indicated:

- (a) "The order" means the agreement entered into between the Purchaser and the Supplier including all the attachments and appendices and all documents incorporated as per notification of award.
- (b) "The Contract Price" means the price payable to the Supplier under the Contract for the full and proper performance of its contractual obligations;
- (c) "The Goods" means all the items, which the Supplier is required to supply to the Purchaser under the Contract;
- (d) "Services" means services ancillary to the supply of the Goods, such as transportation and insurance, and any other incidental services training and other obligations of the Supplier covered under the Contract;
- (e) "GCC" means the General Conditions of Contract contained in this section.
- (f) "The Purchaser" means the organization purchasing the Goods i.e. IIT (BHU), VARANASI.
- (g) "The Purchaser's country" is India.
- (h) "The Supplier" means the individual or firm supplying the Goods and Services under this Contract.
- (i) "Day" means calendar day.

### **2. Application**

These General Conditions shall apply to the extent that they are not superseded by provisions in other parts of the Contract.

### **3. Standards**

The Goods supplied under this Contract shall conform to the standards mentioned in the Technical Specifications, and, when no applicable standard is mentioned, to the authoritative standard appropriate to the Goods' country of origin and such standards shall be the latest issued by the concerned Institution.

### **4. Use of Contract Documents and Information**

The Supplier shall not, without the Purchaser's prior written consent, disclose the Contract, or any provision thereof, or any specification, plan, drawing, pattern, sample or information furnished by or

on behalf of the Purchaser in connection therewith, to any person other than a person employed by the Supplier in performance of the Contract. Disclosure to any such employed person shall be made in confidence and shall extend only so far as may be necessary for purposes of such performance.

The Supplier shall not, without the Purchaser's prior written consent, make use of any document or information except for purposes of performing the Contract.

Any document, other than the Contract itself, shall remain the property of the Purchaser and shall be returned (in all copies) to the Purchaser on completion of the Supplier's performance under the Contract if so required by the Purchaser.

## **5. Patent Rights**

The Supplier shall indemnify the Purchaser against all third-party claims of infringement of patent, trademark or industrial design rights arising from use of the Goods or any part thereof in India.

## **6. Submission of the bids.**

All bids complete in all respect must be submitted online on or before the Bid Closing date and time as mentioned on Critical Data Sheet. Tenders received without earnest money etc. shall be rejected.

Tender documents are available on IIT (BHU) website: <https://iitbhu.ac.in/tenders> or from Central Public Procurement Portal (CPPP) <https://eprocure.gov.in/eprocure/app>.

Interested bidders may submit their bid through Central Public Procurement Portal (CPPP) <https://eprocure.gov.in/eprocure/app>.

## **7. Inspections and Tests**

The Purchaser or its representative shall have the right to inspect and/or to test the Goods to confirm their conformity to the Contract specifications at no extra cost to the Purchaser.

The inspections and tests may be conducted on the premises of the Supplier or its subcontractor(s), at point of delivery and/or at the Goods final destination. If conducted on the premises of the Supplier or its subcontractor(s), all reasonable facilities and assistance, including access to drawings and production data shall be furnished to the inspectors at no charge to the Purchaser.

Should any inspected or tested Goods fail to conform to the specifications, the Purchaser may reject the goods and the Supplier shall either replace the rejected Goods or make alterations necessary to meet specification requirements free of cost to the Purchaser.

The Purchaser's right to inspect, test and, where necessary, reject the Goods after the Goods' arrival at Project Site shall in no way be limited or waived by reason of the Goods having previously been inspected, tested and passed by the Purchaser or its representative prior to the Goods shipment.

Nothing in GCC Clause 7 shall in any way release the Supplier from any warranty or other obligations under this Contract.

## **8. Consequences of rejection**

If in the event the stores are rejected by the purchaser at the destination and the supplier fails to make satisfactory supplies within the stipulated period of delivery, the purchaser will be at liberty to:

- (a) Allow the supplier to resubmit the stores in replacement of those rejected, within a specified time without any extra cost to the purchaser or
- (b) Reject the material, which shall be final and binding on the contractor.
- (c) Procure the rejected materials of comparable quality from the open market/Govt. stores and the supplier shall be liable to pay the difference in price over the RC prices or get the amount adjusted from the outstanding bills of the supplier, if any.

## **9. Packing**

The Supplier shall provide such packing of the Goods as is required to prevent their damage or deterioration during transit to their final destination as indicated in the Contract. The packing shall be

sufficient to withstand, without limitation, rough handling during transit and exposure to extreme temperatures, salt and precipitation during transit and open storage. Packing case size and weights shall take into consideration, where appropriate, the remoteness of the Goods' final destination and the absence of heavy handling facilities at all points in transit.

The packing, marking and documentation within and outside the packages shall comply strictly with such special requirements as shall be provided for in the Contract including additional requirements, in any subsequent instructions ordered by the Purchaser.

## **10. Delivery and Documents**

The Supplier shall make delivery of the Goods within 10 months from the placement of purchase order in pursuance of the notification of award. However, the supplier shall also arrange to execute all orders on priority basis which would be placed to meet any emergent requirements.

In case the purchaser decides to conclude parallel rate contracts, then the requirements would be split on different firms on equitable basis as per the discretion of the purchaser.

The delivery of Stores shall be affected at the premises of the Institute free of all delivery charges and within the stipulated time and as may be elucidated in the confirmed order, accompanied by a delivery challan. No extension of time for delivery of Stores shall normally be accorded.

The supplier shall mail the following documents to the purchaser with a copy to the insurance company:

1. 3 Copies of the Supplier invoice showing contract number, goods' description, quantity unit price, total amount;
2. Installation Certificate
3. Insurance Certificate if applicable;
4. Manufacturer's/Supplier's warranty certificate;
5. Inspection Certificate issued by the nominated inspection agency, if any
6. Supplier's factory inspection report; and
7. Certificate of Origin (if possible by the beneficiary);
8. The above documents should be received by the Purchaser before arrival of the Goods (except where the Goods have been delivered directly to the Consignee with all documents) and, if not received, the Supplier will be responsible for any consequent expenses.

**Time and date of delivery – the essence of the contract:** The time for and the date of delivery of the stores stipulated shall be deemed to be of the essence of the contract and delivery must be completed not later than the date(s) specified.

## **11. Insurance**

The Goods supplied under the Contract shall be fully insured in Indian Rupees against loss or damage incidental to manufacture or acquisition, transportation, storage and delivery. The insurance shall be obtained by the suppliers in an amount equal to 110% of the value of the goods from “warehouse to warehouse” (final destinations) on “all risks” basis including war risks and strikes.

## **12. Transportation**

Where the Supplier is required under the Contract to transport the Goods within India defined as Project site, transport to such place of destination in India including insurance, as shall be specified in the Contract, shall be arranged by the Supplier, and the related cost shall be included in the contract Price.

## **13. Warranty**

Please refer to Warranty clause in Annexure-1.

## **14. Payment**

### **For indigenous supply:**

The payment shall be made 100% payment against Supply, Installation and Commissioning and submission of satisfactory PBG.

### **For imports:**

100% payment shall be made through Letter of Credit. Out of this, 70% payment will be released against the invoice, inspection certificate, shipping documents & other required documents as per LC and remaining 30% payment will be released after receiving of materials at IIT (BHU), their successful installation, acceptance of machine & submission of PBG by bidder and its confirmation from the Bank.

The Supplier's request(s) for payment shall be made to the Purchaser in writing, accompanied by an invoice describing, as appropriate, the Goods delivered and the Services performed, and by documents, submitted pursuant to GCC Clause 10, and upon fulfillment of other obligations stipulated in the contract.

## **15. Prices**

Prices charged by the Supplier for Goods delivered and Services performed under the Contract shall not vary from the prices quoted by the Supplier in his bid. The bidder must mention the applicable taxes/duty and exemptions thereon, if any, as per the Government of India norms. The Institute will provide requisite certificate, if any, required by the bidder as per the applicable Govt. of India norms.

## **16. Change Orders**

The Purchaser may at any time, by written order given to the Supplier, make changes within the general scope of the Contract in any one or more of the following:

- (a) Drawings, designs, or specifications, where Goods to be furnished under the Contract are to be specifically manufactured for the Purchaser;
- (b) The method of shipping or packing;
- (c) The place of delivery; and/or
- (d) The services to be provided by the Supplier.

If any such change causes an increase or decrease in the cost of, or the time required for, the Supplier's performance of any provisions under the Contract, an equitable adjustment shall be made in the Contract Price or delivery schedule, or both, and the Contract shall accordingly be amended. Any claims by the Supplier for adjustment under this clause must be asserted within thirty (30) days from the date of the Supplier's receipt of the Purchaser's change order.

## **17. Contract Amendments**

Subject to GCC Clause 16, no variation in or modification of the terms of the Contract shall be made except by written amendment signed by the parties.

## **18. Assignment**

The Supplier shall not assign, in whole or in part, its obligations to perform under the Contract, except with the Purchaser's prior written consent.

## **19. Subcontracts**

The Supplier shall notify the Purchaser in writing of all subcontracts awarded under this Contract if not already specified in the bid. Such notification, in his original bid or later, shall not relieve the Supplier from any liability or obligation under the Contract.

## **20. Delays in the Supplier's Performance**

Delivery of the Goods and performance of the Services shall be made by the Supplier in accordance



with the time schedule specified by the Purchaser as per GCC clause 10.

If at any time during performance of the Contract, the Supplier or its sub-contractor(s) should encounter conditions impeding timely delivery of the Goods and performance of Services, the Supplier shall promptly notify the Purchaser in writing of the fact of the delay, its likely duration and its cause(s). As soon as practicable after receipt of the Supplier's notice, the Purchaser shall evaluate the situation and may, at its discretion, extend the Supplier's time for performance with or without liquidated damages, in which case the extension shall be ratified by the parties by amendment of the Contract.

Except as provided under GCC Clause 23, a delay by the Supplier in the performance of its delivery obligations shall render the Supplier liable to the imposition of penalty pursuant to GCC Clause 21, unless an extension of time is agreed upon pursuant to GCC Clause 20.2 without the application of liquidated damages.

## **21. Penalty**

Subject to GCC Clause 23, if the Supplier fails to deliver any or all of the Goods or to perform the Services within the period(s) specified in the Contract, the Purchaser shall, without prejudice to its other remedies under the Contract, deduct from the Contract Price, as penalty, a sum equivalent to 1% per week and the maximum deduction is 10% of the contract price of the delivered price of the delayed Goods or unperformed Services for each week or part thereof of delay until actual delivery or performance. Once the maximum is reached, the Purchaser may consider termination of the Contract pursuant to GCC Clause 22.

## **22. Termination for Default**

The Purchaser may, without prejudice to any other remedy for breach of contract, by written notice of default sent to the Supplier, terminate the Contract in whole or part:

- (a) If the Supplier fails to deliver any or all of the Goods within the period(s) specified in the purchase order, or within any extension thereof granted by the Purchaser pursuant to GCC Clause 20; or
- (b) If the Supplier fails to perform any other obligation(s) under the Contract.
- (c) If the Supplier, in the judgment of the Purchaser has engaged in corrupt or fraudulent practices in competing for or in executing the Contract.

‘For the purpose of this Clause:

“Corrupt practice” means the offering, giving, receiving or soliciting of any thing of value to influence the action of a public official in the procurement process or in contract execution etc. as per GOI norms.

“Fraudulent practice: a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of the Borrower, and includes collusive practice among Bidders (prior to or after bid submission) designed to establish bid prices at artificial non-competitive levels and to deprive the Borrower of the benefits of free and open competition;” etc. as per GOI norms.

In the event the Purchaser terminates the Contract in whole or in part, pursuant to GCC Clause 22.1, the Purchaser may procure, upon such terms and in such manner as it deems appropriate, Goods or Services similar to those undelivered, and the Supplier shall be liable to the Purchaser for any excess costs for such similar Goods or Services. However, the Supplier shall continue the performance of the Contract to the extent not terminated.

## **23. Force Majeure**

Notwithstanding the provisions of GCC Clauses 20 & 21, the Supplier shall not be liable for imposition of liquidated damages or termination for default, if and to the extent that, its delay in performance or other failure to perform its obligations under the Contract is the result of an event of Force Majeure.

For purposes of this Clause, "Force Majeure" means an event beyond the control of the Supplier and not involving the Supplier's fault or negligence and not foreseeable. Such events may include, but are not limited to, acts of the Purchaser either in its sovereign or contractual capacity, wars or revolutions, fires, floods, epidemics, quarantine restrictions and freight embargoes.

If a Force Majeure situation arises, the Supplier shall promptly notify the Purchaser in writing of such conditions and the cause thereof. Unless otherwise directed by the Purchaser in writing, the Supplier shall continue to perform its obligations under the Contract as far as is reasonably practical, and shall seek all reasonable alternative means for performance not prevented by the Force Majeure event.

#### **24. Termination for Insolvency**

The Purchaser may at any time terminate the Contract by giving written notice to the Supplier, if the Supplier becomes bankrupt or otherwise insolvent. In this event, termination will be without Compensation to the Supplier provided that such termination will not prejudice or affect any right of action or remedy, which has accrued or will accrue thereafter to the Purchaser.

#### **25. Termination for Convenience**

The Purchaser, by written notice sent to the Supplier, may terminate the Contract, in whole or in part, at any time for its convenience. The notice of termination shall specify that termination is for the Purchaser's convenience, the extent to which performance of the Supplier under the Contract is terminated, and the date upon which such termination becomes effective.

The Goods that are complete and ready for shipment within 30 days after the Supplier's receipt of notice of termination shall be accepted by the Purchaser at the Contract terms and prices.

#### **26. Resolution of Disputes**

The Purchaser and the supplier shall make every effort to resolve amicably by direct informal negotiation any disagreement or dispute arising between them under or in connection with the Contract.

If, after thirty (30) days from the commencement of such informal negotiations, the Purchaser and the Supplier have been unable to resolve amicably a Contract dispute, either party may require that the dispute be referred for resolution to the formal mechanisms as specified below. These mechanisms may include, but are not limited to, conciliation mediated by a third party, adjudication in an agreed national or international forum, and national or international arbitration.

In case of Dispute or difference arising between the Purchaser and a supplier relating to any matter arising out of or connected with this agreement, such disputes or difference shall be settled in accordance with the Arbitration and Conciliation Act, 1996 as amended from time to time.

#### **27. Governing Language**

The contract shall be written in English language. Subject to GCC Clause 28, English language version of the Contract shall govern its interpretation. All correspondence and other documents pertaining to the Contract which are exchanged by the parties shall be written in the same language.

#### **28. Applicable Law**

The contract shall be governed by the Law of Contract for the time being in force.

Irrespective of the place of delivery, the place of performance or place of payment under the contract, the contract shall be deemed to have been made at the place from which the acceptance of tender has been issued.

**Jurisdiction of Courts:** The courts of the place from where the acceptance of tender has been issued shall alone have jurisdiction to decide any dispute arising out of or in respect of this contract.

One month notice will be given by either party for termination of Contract during the tenure of Contract for breach of Clause or otherwise.

## 29. Taxes and Duties

Suppliers shall be entirely responsible for all taxes, duties, license fees, road permits, etc., incurred until delivery of the contracted Goods to the Purchaser.

Further, if required the Institute will make direct payment to Custom Department against receipt of Challan from the supplier.

## 30. Performance Security:

- (i) Successful bidder have to furnish **5%** of the order value as a performance security in the shape of Fixed Deposit Receipt / Bank Guarantee in favour of the Registrar, Indian Institute of Technology (BHU) valid for a period of 60 days beyond the end of all warranty period / obligations (i.e. must valid for 62 months). Fixed Deposit Receipt / Bank Guarantee should be issued from a schedule bank in India.
- (ii) Earnest Money Deposit will be refunded to the successful bidder on receipt of Performance Security.

## 31. Supplier Integrity

The Supplier is responsible for and obliged to conduct all contracted activities in accordance with the Contract using state of the art methods and economic principles and exercising all means available to achieve the performance specified in the contract.

### **The Institute Reserves The Right To:**

1. Reject the quotation in absence of not furnishing the documentary evidence in respect of Trade Tax Registration (G.S.T), Income Tax and Trade Tax clearance certificates together with the performance of supplies in various branches/institutions.
2. Reject the quotation in the event of non-furnishing the authentic documentary evidence in respect of Testing reports / Performance report of the concerned Govt. Organization / Institutions about the products being manufactured and marketed. The performance test of the product can be conducted at Institute level also for which charge will have to be borne by the suppliers.
3. Reject the supplies already made, if not found up to the mark. Thorough checking may be adopted to test the correctness of the supply. In such an event further action may call to conform or discard the supply.
4. To reject any addition/alteration in respect of local dealerships intimated by the Principals after consideration of the case by the committee appointed by the Institute for the purpose.
5. Cancel this Tender at any point of time without assigning any reason thereof.
6. The Institute also reserves the right to reject the bid of any participated bidder
7. The Purchaser may, without prejudice to any other remedy for breach of contract, by written notice of default sent to the Supplier, terminate the Contract in whole or part:
  - (a) If the Supplier fails to deliver any or all of the Goods within the period(s) specified in the purchase order, or within any extension thereof granted by the Purchaser.
  - (b) If the Supplier fails to perform any other obligation(s) under the Contract.
  - (c) If the Supplier, in the judgment of the Purchaser has engaged in corrupt or fraudulent practices in competing for or in executing the Contract.
8. To reject any or all the offers without assigning any reasons thereof.
9. All disputes are subject to ***“Varanasi Jurisdiction”*** only.
10. The decisions of the Institute in all respect shall be final and binding on all.
11. The Institute reserves the right to ask the successful bidder to produce all the original documents submitted along with the bids for verification at any point of time. During the verification of the document, if it is found that the bidder has concealed/falsified/fabricated any information, the bid and/or purchase order will be cancelled and/or performance security will be forfeited and action

including blacklisting will be taken against the bidder as per norms of the Institute.

12. Please ensure that your offer is complete in all respect as no further clarifications shall be sought from you and reaches us within the last date mentioned above. **The Institute shall not be responsible for any delay etc.**

**Dr. Joysurya Basu**

**Principal Investigator**

**Project No: R&D/SA/DST-FIST/Met/Scm./20-21/01**

**Department of Metallurgical Engg,**

**IIT (BHU), Varanasi-221005**

**NOTE: 1- *While arranging the Tender Documents, check list should be placed on TOP.***

## **SECTION 4 : SPECIAL CONDITIONS OF CONTRACT**

*(to be defined by the Purchaser as per the requirement)*

### **1. Essential Pre Bid Criteria**

**Mandatory requirements from the bidders. A bid will be disqualified if any of the criteria provided in I-VII is not fulfilled. Bidders are required to upload the supporting documents for each of the following points under cover 1.**

- I. Bidders should be the manufacturer (OEM)/authorized dealer. In case the bid is submitted by the Authorized dealer, the currently valid Authorization letter for participating in this Tender (by clearly mentioning the Reference of this Tender) issued by the OEM must be uploaded (in Annexure V format). The Letter of authorization shall remain valid during execution of supply and installation.
- II. An undertaking from the OEM is required stating that they would facilitate the bidder on a regular basis with technology/product updates and extend all support for the warranty period and five years beyond the warranty in confirmation with this bid for the quoted items. In case the OEM withdraws its authorization from bidder, the above service will continued to be provided by the OEM.
- III. A notarized affidavit by the bidder that it has never been black-listed by any IITs/NITS/Govt. Offices/PSUs/Govt. Funded Universities/Govt. Funded Autonomous Bodies/Govt. Bodies/ Deemed University must be uploaded along with the technical Bid under cover 1, failing which the Bid shall be rejected. The original shall be submitted before the award of bid by the lowest evaluated successful bidder. **This affidavit must be issued on or after issuance of this tender.**
- IV. The OEM/bidder must have executed at least three similar natures of supply and installation in any IITs/NITS/Govt. Offices/PSUs/Govt. Funded Universities/Govt. Funded Autonomous Bodies/Govt. Bodies/ Deemed University with order value of at least Rs. 5 crore each during the 1<sup>st</sup> April 2017 to 31<sup>st</sup> March 2023. Copies of purchase order, satisfactory installation certificate, names of user, their mobile number/ phone number and email id need to be uploaded. The purchaser may ask for input from user where the quoted instrument has been installed.
- V. Adherence to all specifications is compulsory.
- VI. Certificate as per Annexure-V, VI and VII on the letterhead of the company must be uploaded.
- VII. Only those bidders who will quote rates of all the items will be consider for evaluation. Lowest bidder will be decided on overall L1 basis.

**NOTE: THE BID OF THOSE BIDDERS WHO FAILS TO COMPLY THE ABOVE ESSENTIAL CRITERIA WILL NOT BE CONSIDERED FOR TECHNICAL EVALUATION.**

## **2. Documents Comprising the Bid**

The tender/Bid shall be submitted online in two part, viz., Technical Bid and Commercial Bid.

### **I. Technical Bid**

The following documents are to be scanned and uploaded as part of the Technical Bid as per the tender document:

- (a) Scanned copy of Tender Forms (Techno Commercial Un-Priced Bid), Declaration, and Tender Acceptance Letter;
- (b) Scanned copy of proof for submission of Tender Document Fee/ Earnest Money Deposit/ Declaration Form as per as per Annexure-VII/Exemption Certificate, if any etc.;
- (c) Scanned copy of written confirmation authorizing the signatory of the Bid to commit the Bidder;
- (d) Scanned copy of quoted product brochure
- (e) Scanned copy of completely filled Annexure III with supporting documents
- (f) Scanned copy of Technical Bid and essential Pre-bid Details, if any.
  - i. Scanned copy of documentary evidence establishing the Bidder's qualifications to perform the contract if its bid is accepted and the Bidder's eligibility to bid;
  - ii. Scanned copy of documentary evidence, that the Goods and Related Services to be supplied by the Bidder are of eligible origin and conform to the Bidding Documents, and
- (g) Scanned copy of Checklist, compliance of Essential pre-bid criteria and Technical Compliance Sheet (Annexure II) and any other document required as per the tender;
- (h) Certificate as per Annexure VI.

### **II. Commercial Bid**

The commercial bid comprises of :

- (i) Scanned copy of Tender Form (Price Bid)
- (ii) Price bid in the form of **.xls format** and to be uploaded in .xls & signed copy to be uploaded in **.pdf format**.

The Price bid format is provided as .xls format along with this Tender Document at <http://eprocure.gov.in/eprocure/app>. Bidders are advised to download this .xls format and quote their offer/rates in the prescribed column.

In addition to the above requirements, bids submitted by a Joint Venture, shall include a copy of the Joint Venture Agreement entered into by all members. Alternatively, a letter of intent to execute a Joint Venture Agreement in the event of a successful bid shall be signed by all members and submitted with the bid, together with a copy of the proposed Agreement, there to.

The Bidder shall furnish in the Tender Forms information on commissions and gratuities, if any, paid or to be paid to agents or any other party relating to this Bid.

## **3. Installation & Demonstration**

The supplier is required to complete the installation and demonstration of the equipment within one week of the arrival of materials at the IIT (BHU) site of installation, otherwise the penalty clause will be the same as per the supply of materials.

In case of any mishappening/damage to equipment and supplies during the carriage of supplies from the origin of equipment to the installation site, the supplier has to replace it with new equipment/supplies immediately at his own risk. Supplier will settle his claim with the insurance company as per his convenience. IIT (BHU) will not be liable to any type of losses in any form.

## **4. Application Specialist**

The Tenderer should mention in the Techno-Commercial bid the availability and names of Application Specialist and Service Engineers in the nearest regional office.

## 5. Spares

The Manufacturer/Supplier is required to provide state availability of spares for ten years, if required.

## 6. Training of Personnel

The supplier shall be required to undertake to provide the technical training to the personnel involved in the use of the equipment at the Institute premises, immediately after completing the installation of the equipment for a minimum period of one week at the supplier's cost.

## 7. User List

The bidder must provide the list of users where they have deployed similar nature of equipments in last 5 years in prescribed format of Annexure III.

## 8. Manuals/Documents

1 set of hard copy and 1 set of soft copy in English (preferred as following).

- i. Operating manual
- ii. Servicing & Maintenance manual
- iii. Spare parts list with source of supply and prices
- iv. Pre-installation requirements.

## 10. Services

Bidder must submit Factory Acceptance Test procedure supported with relevant printed literature and certificates.

11. The Tender document should also indicate what kind of service/maintenance is required for the system. Whether this service has to be carried out by a company engineer or it can be carried by trained service personnel within India. The frequency of visit and the charges should be mentioned.
12. The Tender should be enclosed with proper certifications like **Authorization Certificate** and **Proprietary Certificate** (in case of Proprietary items).
13. Pre-installation site preparation/inspection requirements to be indicated and specified along with the bid.
14. Bid should include FOR IIT(BHU), Varanasi prices. The Institute will provide requisite certificate, if any, required by the bidder as per the applicable Govt. of India norms.
15. The Bidder to provide compliance statement with respect to each technical specification in the tender document duly supported by the manufacturer's literature. Any other claim will not be accepted and may lead to rejection of the bid.
16. Printed literature in support of compliance to the prescribed specifications is to be submitted.
17. Compliance report needs to be submitted as a part of the technical bid.
18. **Exemption is allowed from payment of Tender fees and EMD as per Government of India norms against submission of currently valid certificate specifically for the item(s) proposed to be procured through this Tender.**
19. The Institute will provide Custom Duty Exemption Certificate as and when required.
20. Bidder should confirm their acceptance that they comply with the provisions with report to "Guidelines for eligibility of a bidder from a country which shares a land border with India as detailed at Annexure-VI. The bidder should submit Certificate for "Bidder from/ Not from Country sharing Land border with India & Registration of Bidder with Competent Authority" as per Order of DoE F.No.6/18/2019-PPD dated 23.07.2020 as mentioned. A certificate shall be submitted by bidders in the tender documents regarding their compliance with the said order. If the certificate submitted by a bidder whose bid is accepted is found to be false, this would be a ground for immediate termination and further legal action in accordance with law. Annexure VI.
21. **Defective Equipment:** If any of the equipment supplied by the Tenderer is found to be substandard, refurbished, un-merchantable or not in accordance with the description/specification or otherwise faulty, the committee will have the right to reject the equipment or its part. The prices of such



equipment shall be refunded by the Tenderer with 18% interest if such payments for such equipment have already been made. All damaged or unapproved goods shall be returned at suppliers cost and risk and the incidental expenses incurred thereon shall be recovered from the supplier. Defective part in equipment, if found before installation and/or during warranty period, shall be replaced within 30 days on receipt of the intimation from this office at the cost and risk of supplier including all other charges. In case supplier fails to replace above item as per above terms & conditions, IIT (BHU) may consider "Banning" the supplier.

**IMPORTANT NOTE:**

1. Non-compliance of tender terms, non-uploading of required documents, lack of clarity of the specifications, contradiction between bidder specifications and supporting literature etc. may lead to rejection of the bid.
2. In the tender, either the Indian agent on behalf of the Principal/OEM or Principal/OEM itself can bid but both cannot bid simultaneously for the same item/product in the same tender.
3. If an agent submits bid on behalf of the Principal/OEM, the same agent shall not submit a bid on behalf of another Principal/OEM in the same tender for the same item/product.

**All documents in support of above essential pre-bid criteria shall be scanned and uploaded under cover 1.**

## **SECTION 5 : CHECKLIST FOR BID/TENDER SUBMISSION**

**(The following check-list must be filled in and submitted with the bid documents)**

<b>Sl. No.</b>	<b>Particulars</b>	<b>Yes/No</b>
1	Have you mentioned the page no. and authorized signatory signature on each page of your bid document?	
2	Have you attached the techno commercial unpriced bid form duly filled in appropriately?	
3	Have you attached a copy of the last audited balance sheet of your firm as per tender requirement?	
4	Have you attached the details of the income tax clearance certificate, proof of manufacturing unit/ dealership letter/ general order suppliers and copy of GST registration certificate?	
5	Have you executed the similar nature of work in last 5 year (1 <sup>st</sup> April 2017 to 31 <sup>st</sup> March 2023) in IITs/NITS/Govt. Offices/PSUs/Govt. Funded Universities/ Govt. Funded Autonomous Bodies/Govt. Bodies/ Deemed University?	
6	Have you attached the copies of relevant work orders from IITs/NITS/Govt. Offices/PSUs/Govt. Funded Universities/ Govt. Funded Autonomous Bodies/Govt. Bodies/ Deemed University in prescribed Format?	
7	EMD/ Bid Security: Have you submitted EMD/ Declaration Form as per as per Annexure-VII asked for?	
8	Have you submitted samples of all items indicated in the respective schedule of requirements at the address of tender inviting authority within due date?	
9	Have you enclosed the schedule of requirement indicating the make offered without indicating the pricing components along with the techno commercial unpriced bid?	
10	Have you submitted the bids both techno commercial unpriced and priced bid separately for each tender?	
11	Have you enclosed the statement of deviations from financial terms and conditions, if any?	
12	Have you submitted the Technical Compliance Sheet?	
13	Have you attached Manufacturer's Authorization certificate for this Tender?	
14	Have you attached the Declaration on the letter pad of Bidder?	
15	Have you attached the compliance of Pre-qualification criteria?	
16	Have you attached the signed Tender acceptance letter?	
<b>Price Bid</b>		
1	Have you signed and attached the priced bid form?	
2	Have you attached the schedule of requirements duly priced i.e BoQ in both .xls format and in .pdf format?	

**COMPLIANCE SHEET OF ESSENTIAL PRE BID CRITERIA**

Sl. No.	Essential Pre Bid Criteria	Compliance	Page No.
1.	Bidders should be the manufacturer (OEM)/authorized dealer. In case the bid is submitted by the Authorized dealer, the currently valid Authorization letter for participating in this Tender (by clearly mentioning the Reference of this Tender) issued by the OEM must be uploaded (in Annexure V format). The Letter of authorization shall remain valid during execution of supply and installation.		
2.	An undertaking from the OEM is required stating that they would facilitate the bidder on a regular basis with technology/product updates and extend all support for the warranty period and five years beyond the warranty in confirmation with this bid for the quoted items. In case the OEM withdraws its authorization from bidder, the above service will continued to be provided by the OEM.		
3.	A notarized affidavit by the bidder that it has never been black-listed by any IITs/NITS/Govt. Offices/PSUs/Govt. Funded Universities/ Govt. Funded Autonomous Bodies/Govt. Bodies/ Deemed University must be uploaded along with the technical Bid under cover 1, failing which the Bid shall be rejected. The original shall be submitted before the award of bid by the lowest evaluated successful bidder. <b>This affidavit must be issued on or after issuance of this tender.</b>		
4.	The OEM/bidder must have executed at least three similar natures of supply and installation in any IITs/NITS/Govt. Offices/PSUs/Govt. Funded Universities/ Govt. Funded Autonomous Bodies/Govt. Bodies/ Deemed University with order value of at least Rs. 5 crore each during the 1 <sup>st</sup> April 2017 to 31 <sup>st</sup> March 2023. Copies of purchase order, satisfactory installation certificate, names of user, their mobile number/ phone number and email id need to be uploaded. The purchaser may ask for input from user where the quoted instrument has been installed.		
5.	Adherence to all specifications is compulsory		
6.	Certificate as per Annexure-V, VI and VII on the letterhead of the company must be uploaded		

**All documents in support of above essential pre-bid criteria shall be scanned and uploaded under cover 1**

-----  
Signature of the Authorized Person

Date: -----

Full Name -----

Place: -----

Company Address with Seal

## **SECTION 6**

### **DECLARATION**

*(On the letter head of the firm submitting the bid)*

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.
6. This is certified that our organization has been authorized (Copy attached) by the OEM to participate in Tender. We further certified that our organization meets all the conditions of eligibility criteria laid down in this tender document. Moreover, OEM has agreed to support on regular basis with technology / product updates and extend support for the warranty.
7. The prices quoted in the price bids are subsidized due to academic discount given to IIT (BHU), Varanasi.
8. We, further specifically certify that our our organization has never been Black Listed/De Listed or put to any Holiday by any IITs/NITS/Govt. Offices/PSUs/Govt. Funded Universities/ Govt. Funded Autonomous Bodies/Govt. Bodies/ Deemed University till date.

-----  
Signature of the Authorized Person

Date: -----

Full Name -----

Place: -----

Company Address with Seal

## **SECTION 7**

### **TENDER FORM**

#### **(Techno commercial un-priced Bid)**

*(On the letter head of the firm submitting the bid)*

Tender No. ....

To

**Dr. Joysurya Basu**

**Principal Investigator**

**Project No: R&D/SA/DST-FIST/Met/Scm./20-21/01**

**Department of Metallurgical Engg,**

**IIT (BHU), Varanasi-221005**

Dear Sir,

1. I/We have examined and have no reservations to the Bidding Documents, including Addenda issued in accordance with Instructions to Bidders;
2. I/We meet the eligibility requirements and have no conflict of interest ;
3. I/We have not been suspended nor declared ineligible in India;
4. I/We offer to supply in conformity with the Bidding Documents and in accordance with the Delivery Schedules specified in the Schedule of Requirements the following Goods: *[insert a brief description of the Goods and Related Services]*;
5. I/We offer to supply the items as listed in the schedule to this tender hereto/portion thereof as you may specify in the acceptance of Tender at the price given in the said Schedule and agree to hold this offer open for a period of .....days from the date of opening of the tender.
6. I/we shall be bound by a communication of acceptance issued by you.
7. I/We have understood the Instruction to bidders and Conditions of Contract in the form as enclosed with the invitation to the tender and have thoroughly examined the specifications quoted in the Schedule hereto and am/are fully aware of the nature of the goods required and my/our offer is to supply the goods strictly in accordance with the specifications and requirements.
8. Bid Security Declaration Form as per Annexure-VII has been enclosed.
9. The following have been added to form part of this tender.
  - (a) Schedule of requirements, quoting the make only duly signed and stamped.(without indicating price)
  - (b) Income Tax clearance certificate.
  - (c) Copy of last audited balance sheet.
  - (d) Copy of Valid GST registration certificate.
  - (e) Copy of similar relevant major purchase orders executed during last Five years in IITs/NITS/Govt. Offices/PSUs/Govt. Funded Universities/ Govt. Funded Autonomous Bodies/Govt. Bodies/ Deemed University.
  - (f) Proof of manufacturing Unit, dealership certificate/general order suppliers.
  - (g) Statement of deviations from financial terms & conditions, if any.
  - (h) Any other enclosure. (Please give details)

10. We undertake to execute all orders which have been placed to meet emergent requirements on priority basis.

11. Certified that the bidder is:

(a) A sole proprietorship firm and the person signing the bid document is the sole proprietor/constituted attorney of the sole proprietor,

**Or**

(b) A partnership firm, and the person signing the bid document is a partner of the firm and he has authority to refer to arbitration disputes concerning the business of the partnership by virtue of the partnership agreement/by virtue of general power of attorney.

**Or**

(c) A company and the person signing the document is the constituted attorney.

***(NOTE: Delete whatever is not applicable. All corrections/deletions should invariable be duly attested by the person authorized to sign the bid document).***

12. We do hereby undertake that, until a formal notification of award, this bid, together with your written acceptance thereof shall constitute a binding contract between us.

13. If our bid is accepted, we commit to obtain a performance security in accordance with the Bidding Documents;

14. We are not participating, as a Bidder or as a subcontractor, in more than one bid in this bidding process, other than alternative bids submitted;

15. We hereby certify that we have taken steps to ensure that no person acting for us or on our behalf will engage in any type of fraud and corruption

Name of the Bidder\* .....

Name of the person duly authorized to sign the Bid on behalf of the Bidder\*\* .....

Title of the person signing the Bid .....

Signature of the person named above .....

Date signed ..... day of .....

\* In the case of the Bid submitted by joint venture specify the name of the Joint Venture as Bidder

\*\* Person signing the Bid shall have the power of attorney given by the Bidder to be attached with the Bid Schedules.

Yours faithfully,

(Signature of bidder)

Dated this day of \_\_\_\_\_

Address: .....

Telephone No. : \_\_\_\_\_

FAX \_\_\_\_\_

E-mail \_\_\_\_\_

Company seal

## **TENDER FORM**

### **(Priced Bid)**

*(On the letter head of the firm submitting the bid document)*

To,  
**Dr. Joysurya Basu**  
**Principal Investigator**  
**Project No: R&D/SA/DST-FIST/Met/Scm./20-21/01**  
**Department of Metallurgical Engg,**  
**IIT (BHU), Varanasi-221005**

Ref: Tender No.....Dated: .....

Sir,

Having examined the bidding documents and having submitted the techno commercial unpriced bid for the same, we, the undersigned, hereby submit the priced bid for supply of goods and services as per the schedule of requirements and in conformity with the said bidding documents.

1. We hereby offer to supply the Goods/Services at the prices and rates mentioned in the enclosed schedule of requirement.
2. We do hereby undertake that, in the event of acceptance of our bid, the supply of Goods/Services shall be made as stipulated in the schedule of requirement and that we shall perform all the incidental services.
3. The prices quoted are inclusive of all charges net FOR IIT(BHU) Varanasi and should be mentioned clearly. We enclose herewith the complete Financial Bid as required by you. This includes:
  - a. Price Schedule (Bill of Quantity-BOQ).
  - b. Statement of deviations from financial terms and conditions.
4. We agree to abide by our offer for a period of 180 days from the date fixed for opening of the bid documents and that we shall remain bound by a communication of acceptance within that time.
5. We have carefully read and understood the terms and conditions of the bid document and we do hereby undertake to supply as per these terms and conditions. The Financial Deviations are only those mentioned in the statement of deviations from financial terms and conditions.
6. We have paid, or will pay the following commissions, gratuities, or fees with respect to the bidding process or execution of the Contract: **[insert complete name of each Recipient, its full address, the reason for which each commission or gratuity was paid and the amount and currency of each such commission or gratuity]**

Name of Recipient	Address	Reason	Amount

(If none has been paid or is to be paid, indicate "none.")



7. We understand that this bid, together with your written acceptance thereof included in your notification of award, shall constitute a binding contract between us, until a formal contract is prepared and executed; and
8. We understand that you are not bound to accept the lowest evaluated bid or any other bid that you may receive.

Certified that the bidder is:

A sole proprietorship firm and the person signing the bid document is the sole proprietor/ constituted attorney of sole proprietor,

**Or**

A partnership firm, and the person signing the bid document is a partner of the firm and he has authority to refer to arbitration disputes concerning the business of the partnership by virtue of the partnership agreement/by virtue of general power of attorney,

**Or**

A company and the person signing the bid document is the constituted attorney.

***(NOTE: Delete whatever is not applicable. All corrections/deletions should invariably be duly attested by the person authorized to sign the bid document.)***

We do hereby undertake that, until a formal notification of award, this bid, together with your written acceptance thereof, shall constitute a binding contract between us.

Dated this day of \_\_\_\_\_

Signature of Bidder \_\_\_\_\_

Details of enclosures \_\_\_\_\_

Full Address: \_\_\_\_\_

\_\_\_\_\_

Telephone No. \_\_\_\_\_

Mobile No. : \_\_\_\_\_

Fax No. : \_\_\_\_\_

E-mail: \_\_\_\_\_

Company Seal

**TENDER ACCEPTANCE LETTER**

(To be given on Company Letter Head)

**Date:**

**Dr. Joysurya Basu**  
**Principal Investigator**  
**Project No: R&D/SA/DST-FIST/Met/Scm./20-21/01**  
**Department of Metallurgical Engg,**  
**IIT (BHU), Varanasi-221005**

**Sub: Acceptance of Terms & Conditions of Tender.**

**Tender Reference No.**\_\_\_\_\_

**Name of Tender/ Work:**

**TENDER FOR SUPPLY, INSTALLATION, DEMONSTRATION OF Analytical  
Transmission Electron Microscope and Ion Beam Milling System**

Dear Sir,

1. I/We have downloaded/ obtained the tender document(s) for the above mentioned 'Tender/Work' from the web site(s) namely:

\_\_\_\_\_  
\_\_\_\_\_

as per your advertisement, given in the above mentioned website(s).

2. I/We hereby certify that I/We have read the entire terms and conditions of the tender documents from Page No. \_\_\_\_\_ to \_\_\_\_\_ (including all documents like section(s), schedules(s) etc.), which form part of the contract agreement and I/we shall abide hereby by the terms/conditions/ clauses contained therein.
3. The corrigendum(s) issued from time to time by your department/ organisation too have also been taken into consideration, while submitting this acceptance letter.
4. I/We hereby unconditionally accept the tender conditions of above mentioned tender document(s)/ corrigendum(s) in its totality/entirety.
5. In case any provisions of this tender are found violated, then your department/organisation shall without prejudice to any other right or remedy be at liberty to reject this tender/bid including the forfeiture of the full said earnest money deposit absolutely.

**Yours faithfully,**

**(Signature of the Bidder, with Official Seal)**

**FORMAT FOR PERFORMANCE BANK GUARANTEE (PBG)/ PERFORMANCE SECURITY**

(To be typed on Non-judicial stamp paper of the value of Indian Rupees of Ten Thousand)

(TO BE ESTABLISHED THROUGH ANY OF THE NATIONALISED COMMERCIAL BANKS (WHETHER SITUATED AT VARANASI OR OUTSTATION) WITH A CLAUSE TO ENFORCE THE SAME ON THEIR LOCAL BRANCH AT VARANASI)

To,  
The Registrar,  
Indian Institute of Technology (BHU),  
Varanasi-221005

**LETTER OF GUARANTEE**

WHEREAS Indian Institute of Technology (BHU), Varanasi (Buyer) has invited tender vide Tender No..... dated..... for purchase of .....  
AND WHEREAS the said tender document requires that eligible successful bidder (seller). .... wishing to supply the equipment / machinery, etc. in response thereto shall establish an irrevocable Performance Bank Guarantee in favour of “ The Registrar, Indian Institute of Technology (BHU), Varanasi” in the form of Bank Guarantee for Rs ..... **(5% of the contract value)** and the Performance Bank Guarantee shall remain valid for a period of 60 (sixty) days beyond the date of completion of all contractual obligations of the seller, including warranty obligations from the date of issue of Performance Bank Guarantee and the eligible successful bidder (the seller) shall submit the same before release of final payment.

NOW THIS BANK HEREBY GUARANTEES that in the event of the said bidder (seller) fails to abide by any of the conditions referred to in tender document / Award of Contract / performance of the equipment / machinery, etc. this Bank shall pay to Indian Institute of Technology (BHU), Varanasi on demand and without protest or demur Rs ..... (Rupees. ....).

This Bank further agrees that the decision of Indian Institute of Technology (BHU), Varanasi (Buyer) as to whether the said bidder (Seller) has committed a breach of any of the conditions referred in tender document / Award of Contract shall be final and binding.

We, ..... (name of the Bank & branch) hereby further agree that the Guarantee herein contained shall not be affected by any change in the constitution of the bidder (Seller) and/ or Indian Institute of Technology (BHU), Varanasi (Buyer). **Notwithstanding anything contained herein:**

1. Our liability under this Bank Guarantee shall not exceed Rs. .... (Indian Rupees ..... only).
2. This Bank Guarantee shall be valid up to ..... (date) and
3. We are liable to pay the guaranteed amount or any part thereof under this bank guarantee only and only if IIT (BHU), Varanasi serve upon us a written claim or demand on or before ..... (date). This Bank further agrees that the claims if any, against this Bank Guarantee shall be enforceable at our branch office at ..... situated at ..... (Address of local branch).

Yours truly,

Signature and seal of the guarantor:

Name of Bank:

Address:

Date:

## SECTION 8

### SCHEDULE OF REQUIREMENTS

#### **I. TECHNICAL SPECIFICATIONS**

#### Annexure I

Department of Metallurgical Engineering, Indian Institute of Technology (BHU), Varanasi is planning to establish a state-of-the-art analytical atomic resolution electron microscope facility under the DST-FIST sponsored project. Indian Institute of Technology (BHU), Varanasi invites online bids (Technical bid and Commercial Bid) from eligible and experienced OEM (Original Equipment Manufacturer) or OEM Authorized Dealer for Analytical Atomic Resolution Transmission Electron Microscope and Ion Beam Milling System with (warranty as stated under the technical specification of this tender) on site comprehensive warranty as stated in the tender specification. The microscope should be able to do conventional diffraction contrast (BF/DF imaging), high resolution phase contrast (HRTEM), mass-thickness contrast imaging (HR-STEM) in conjunction with different spectroscopy e. g. XEDS/EELS along with different types of diffraction such as SAD, CBED, LACBED etc. It is mandatory that every eligible bidder has to submit the technical and financial bids for all the items. Incomplete bid will lead to technical rejection.

#### TECHNICAL SPECIFICATION

##### Analytical Transmission Electron Microscope

S. No.	Parameters	Desired Specifications
1.	Item Name/Quantity	Analytical High Resolution Transmission Electron Microscope, 1 No.
2.	Accelerating Voltage	200 kV-user changeable either in steps or continuously without intervention of any service engineer. The condenser should be aligned at least for two voltages as specified by the user at no extra cost. The voltages are 120 kV and 200 kV for a 200 kV microscope. The lens data should be provided by the OEM to the user for the two above mentioned voltages. Minimum step size should be $\leq 50$ V. HT variation should be quick and should be possible by the user at the site of the installation.
3.	Electron Source	Field Emission Gun with energy spread $\leq 0.8$ eV or better. The source should be compatible with all the designed accelerating voltages as mentioned in point 2 of the tender. The warranty period of the electron source should be included in the warranty period of the microscope. During the warranty period the replacement of FEG source is the responsibility of the supplier within the time limit as specified in the warranty section of the tender. Installations in the country should be mentioned along with their performance.
4.	Resolution and spot size	Point to point resolution in TEM mode should be $\leq 0.25$ nm or better, in the STEM mode the point to point resolution should be $\leq 0.16$ nm or better. Failure to comply with this requirement may lead to rejection of the bid. The quoted resolution should be guaranteed at the customer site.
5.	Magnification	i) TEM Magnification: Range 500x to 1.0 Mx or higher ii) STEM Magnification: Range 5000x to 150 Mx or higher

6.	Operation Modes	The TEM and the STEM should be fully digital microprocessor controlled with following modes. Hardware and software required for all the following imaging and diffraction modes should be in-built and activated. BF, DF, HRTEM, STEM-BF, STEM-DF, HAADF (8 or more segmented detector), ABF, ADF, DPC, SAED, CBED, LACBED, NBD, STEM-EDS
7.	Permissible Aberration	i) Spherical aberration $\leq 1.5$ mm or better ii) Chromatic aberration $\leq 2$ mm or better
8.	Cooling System	Close circuit automatic temperature and flow rate-controlled water-cooled chillers and air compressors should be supplied with the microscope at no extra cost for smooth operation.
9.	Lens System	System consisting of condenser lens, objective lens, diffraction, intermediate and projection lens. Condenser Lens should have optimum thermal stability and image drift. Objective Lens: The objective lens system should allow different types of holders including large specimen tilt for tomographic experiments. It should allow the specimen to be constant at the eucentric position at different operating modes even while spectral mapping. Objective lens should have wide gap pole piece to accommodate different types of special holders. It should have activated Lorentz lens for field free imaging of magnetic samples and Lorentz microscopy Rotational calibration of the lenses should be done at the site of installation by company approved service engineers and it should be provided to the users. The standard samples for different calibration should be provided to the user at no extra cost.
10.	Vacuum System	Microscope should have oil free vacuum system. The vacuum system should have fail-safe mechanism with suitable electronics interlock. Software based continuous monitoring and display of pressure should be there.
11.	Specimen chamber	Goniometer maximum tilt should be $\pm 70$ ( $\pm 1.0$ mm) degrees or higher (maximum goniometer tilt under the provided objective lens assembly should be spelt out); X movement range – 2 mm in total or more; Y movement range – 2 mm in total or more; Z movement range – 0.20 mm in total or more; Specimen grid size 3 mm; Microscope should have a fully eucentric goniometer with all 5 axis motorized; TEM stage should be stable with maximum drift 0.5 nm/min or better; Facility for recording specific specimen translation position as reference point in memory. Dedicated pumping system for specimen/airlock chamber should be provided.
12.	STEM detector	STEM system should have bright field (BF), Annular Bright Field (ABF), dark field (DF)/Annular Dark Field (ADF) and high-angle annular dark field (HAADF) detectors all in activated condition with required hardware and software. Differential phase contrast imaging capability should also be activated and included. Should have an ability to acquire BF/ABF, ADF, LAADF, HAADF and differential phase contrast images simultaneously and also should be multi segmented with at least 8 segments or more.
13.	Recording System	1. Bottom Mounted, retractable, EELS compatible high resolution CMOS camera of minimum 4k*4k pixel @ 25 fps or better with full resolution of 4k*4k

		<p>2. Camera speed should be 25fps or better with full resolution of 4k*4k. sensor active area should be <math>\geq 3200 \text{ mm}^2</math> or better with 14micron pixel size or better having DQE of greater than or equal to 9% or better at <math>\frac{1}{2} \text{ Nq.}</math> at 200kV.</p> <p>3. Camera should be usable at 80-200 kV HT range</p> <p>4. User friendly software for astigmatism correction at high magnification for HRTEM study. The output images should be compatible with commercial image analysis software with annotated scale bar, magnification etc. Facility for linear measurement for diffraction pattern analysis.</p> <p>5. The software should include online (real time drift correction at 4k x 4k, and Live FFT for astigmatism correction) and offline data processing features such as FFT and full support for real space (image mode) and reciprocal space (diffraction mode) calibrations.</p> <p>6. The camera should be supported by a separate computer of appropriate capacity, so that live video image acquisition and storage in hard-disk is possible.</p> <p>7. Additional iMac should be provided with 24 inch retina display, with 512 GB SSD memory for offline data analysis and simulation with minimum 8 GB RAM.</p>
14.	Window less EDS Detector	<p>Window less multiple (two or more) Silicon Drift Detector EDS of active area <math>\geq 60 \text{ mm}^2</math>; Energy Resolution at Mn-K<math>\alpha</math> should be at least 136 eV at 10,000 spectra/s or better; Capability to detect elements with atomic number <math>&gt;5</math> (i.e. from B onwards); Suitable for quantification of elements; Capability of auto-protection in case of vacuum loss or high electron flux.</p> <p>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).</p> <p>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 EDS should be operable through the same GUI of the imaging system.</p> <p>The calibration standards for EDS should be provided. The supplier should arrange for seamless interfacing, software, installation and commission for EDS.</p>
15.	Anti-Contamination Device	Liquid nitrogen based anti-contamination device at least 100 hours to suppress specimen contamination should be provided.
16.	Sample holders	<p>High visibility X-ray low-background Double-tilt Holder- 1 No.;</p> <p>Single-tilt Holder - 1 No.;</p> <p>Double TILT Holder: 1 No.</p>
17.	User Interface	<p>Fully computer-controlled system with window/Mac based software for operating the Microscope along with keyboard, mouse.</p> <p>Manual control panel using knobs, sample movement by track ball or joystick</p> <p>Control Panel and Joystick-Control panel including multifunction; keys/knobs for control and adjustment of</p>

		TEM parameters (focus, magnification etc.) and manual joystick control for stage in X,Y,Z tilt and rotation directions
18.	Work Station and Software	<p>Latest desktop system with sufficient USB ports and windows/Mac compatible operating system to operate the microscope and all attachments and 24 inch or higher HD LED monitor. Licensed software should be provided by the company. All software used to operate the instrument, acquire and process the data should be licensed and should be factory preloaded. Remote license should be provided to monitor and facilitate applicable remote servicing online.</p> <p>Complete software for image analysis, topography, morphology, dynamic picture recording, and image manipulation for separation of different images, super posing and subtraction.</p> <p>Image file in suitable format with all information embedded in it and it should be convertible to JPEG, TIFF &amp; BMP formats. Backup software must be provided on optical media. Any further version of the software and updates must be provided free of cost during the warranty period.</p> <p>Additional one windows and one mac computer with latest specifications, preloaded with the appropriate softwares and latest version of Adobe photoshop should be provided for offline data analysis.</p>
19.	Manual	One set of instruction manual and service manual (both hard and soft copy in English) should be supplied with the equipment.
20.	Pre-Installation requirements	Complete technical details of pre-installation requirements should be furnished along with the technical bid to ensure quoted resolution. IIT (BHU), Varanasi will only provide the installation room, air-conditioning units and required electrical outlets and water connections. Vendors must conduct the site survey before installation at no additional cost. Vendor should provide SF <sub>6</sub> , N <sub>2</sub> or any other gas that might be needed for complete installation and smooth functioning of the microscope.
21.	Installation	Installation, complete interfacing of the system with its subsystems, and commissioning is to be carried out by the vendor's factory-trained engineers, followed by a demonstration of the system's performance to the user's complete satisfaction
22.	Training	The manufacturer/supplier of HRTEM should provide five days onsite training initially during installation followed by regular follow up training every six months during the period of extended warranty on mutually convenient dates for hardware, software and application to the laboratory personnel in the installation, operation and maintenance of the instruments.
23.	Warranty	<p>System should be covered for comprehensive warranty for 1 years from the manufacturer including FE gun maintaining the specified resolutions at the level same as during the time of installation. All parts including spares should be covered under the warranty and this fact should be clearly and explicitly specified in the bid document. Additional four years warranty after the completion of standard one-year warranty should be quoted separately on yearly basis. The comprehensive Warranty should cover:</p> <ol style="list-style-type: none"> <li>1. All parts including accessories, spares, and labor on site including shipment at the site of installation.</li> <li>2. Free maintenance and service on site or at factory with no cost, and</li> <li>3. Regular up-gradation of software till the warranty is not</li> </ol>



		over. 4. Warranty period should start from the date of handover of the machine.
24.	Accessories	Chiller/compressor/UPS with Battery pack and other accessories as required should be included in the offer and should be manufactured by the vendor or internationally reputed manufacturer.
25.	Power supply	Should meet Indian Power standards preferably without use of external converters
26.	Support and service	1. The manufacturer/supplier should have company trained and authorized engineer to address on-site service request within 48 hours. Any delay beyond 120 hours due to the unavailability of manpower would get added to the warranty period. 2. The manufacturer should have provision to supply repair parts in foreign currency through direct order from IIT (BHU), Varanasi after the expiry of the warranty period. 3. The repair issues must be attended to within 2 business days of reporting the issue. In case the parts are required to be imported for repairs, the same should be made available within 2 weeks from the date of reporting of the issue.
27.	Compliance Statement	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 explained. 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.
28.	Required Documents along with technical specifications	The supplier must provide a comprehensive list of users of similar system in India and abroad. They should also submit the name(s) of the service engineer(s) employed by them who is/are competent in maintenance and servicing the equipment along with their locations in India.
29.	Price	DPU Department of Metallurgical Engineering, IIT (BHU) should be quoted. The insurance for the whole system is for the factory warehouse to IIT BHU. This includes the responsibility of custom clearance and other miscellaneous duties at the port of entry. However, the custom duty payment will be made by IIT (BHU) as per actual against received challan from the clearance agent/seller.
30.	Delivery Time	Delivery must be completed within ten months from the date of the order being placed.
31.	Additional Terms	(32a) Compliance statement: With soft copy - point wise according to our document. (32b) User List: Provide user list with contact (address and Phone anywhere in India or abroad) details where the quoted model and/or similar systems have been installed in last 05 years. (32c) Original documents supporting the specifications should be provided.
32.	Technical expertise criteria	As the system is likely to be heavily used by multiple users across the country, it is desirable that the supplier has installed at least 10 or more, fully-functional, equivalent set-up in India and several (>40) equivalent

		systems across the world. It is essential to enclose the information related to installation in India and worldwide of similar setup along with feedback and performance report from at least 5 users in India and 10 different users worldwide.
33.	Installation	The entire process of installation, interfacing of the main system with its subsystems, and commissioning should be carried out by well-trained and technically competent engineers from the supplier. After installation, a complete demonstration of all the features of the HRTEM set-up should be included using the samples provided by the end-user, and the demonstration should meet the expectation of the end-users with complete satisfaction.
34.	User application training	The supplier should arrange for a basic operational training to minimum 5 users after installation and hand over A first phase onsite application training should be arranged by the supplier by an Application expert. A second phase advanced application training should be arranged on-site by the supplier after 6 months with a mutually agreed dates.
Optional Items (Should be quoted separately)		
1.	Errand Boy	The supplier should appoint an errand boy for five years for carrying out day to day activities of the microscope for 5 years with the mutual consent of the user.

## **Ion Beam Milling System**

The ion-beam thinning equipment should be capable of preparing transmission electron microscopy specimens (3 mm diameter) of both conducting and non-conducting samples, such as Silicon Carbide, Silicon, ceramics, multi-phase metals and composites etc. It should not induce damage in the specimen. Also, it should result in large electron transparent regions for viewing in a TEM; both conventional and high resolution TEM modes. The construction and operation of the equipment should be user-friendly. The technical specifications of the equipment are given below:

1.	Item Name/Quantity	Ion beam milling system, Quantity: 1
2.	Ion-guns	<p>Two ion guns each with independently adjustable gas control utilizing mass flow controllers to permit either rapid milling or slow precise ion polishing.</p> <p>Ion beam energy shall be continuously adjustable from 100eV to 8keV or more.</p> <p>The alignment of the ion beams should be user friendly with either a fluorescent screen or a suitable mechanism. Ion beam current and operating voltage should be measurable independently.</p> <p>Ion gun should produce narrow ion beam width at the sample. Typical beam diameter and ion beam currents from each gun should be provided independently typically at 5 keV.</p> <p>The milling angle shall be continuously variable from +10 Deg to -10 Deg and fully adjustable during operation. It should be clearly mentioned whether it is motorized or not.</p> <p>The ion guns shall have no consumable parts or very long life time. Typically, greater than 30,000 hours of continuous operation.</p> <p>The current range should be variable from 0 to 100 micro Amps.</p> <p>The current should be measurable for each gun independently and measured at the gun.</p> <p>Special Operational Mode for preparing cross sectional samples for TEM Analysis should be offered as standard.</p> <p>Ion Gun Energies for both the ion gun should be independently controlled.</p>
2.	Stage and Specimen Holders	<p>A specimen exchange mechanism shall be incorporated in the system to permit loading or unloading of samples without venting the work chamber to atmosphere. Specimen stage should allow rapid transfer of specimens (~1-2 minutes).</p> <p>The Specimen stage should have provision for the rotation of the specimens during milling. Rotational speed shall be continuously variable from 0 – 5 rpm or more.</p> <p>Provision of a mechanism for Sector milling (i.e, milling the specimens from only one side or any side) over a range of 45 to 90 degrees should be available. The mechanism should permit the preparation of cross-sectional TEM specimens of multilayer's without significant milling of the glue-line (or bonding layer used to prepare cross-sections).</p> <p>The Stage shall incorporate X, Y motion to assist the user in positioning the specified mill location at the center of the beam polishing area. The minimum stage travel shall be~ +/-0.5 mm (i.e. ~ 1 mm in total) in X and Y directions. Please note that it should be possible to load the sample in ion milling tool for X &amp; Y Alignment while the sample is mounted on the specimen post.</p> <p>The specimen holder should be able to hold 3 mm diameter TEM specimens by either clamping mechanism or sticking mechanism.</p>

		<p>For loading unloading of the sample in specimen holders, suitable user-friendly mechanism should be provided. Also they can be rapidly and easily transferred in to the ion beam thinning equipment.</p> <p>Specimen heating: A glue-type specimen holder shall be supplied to optimize heat dissipation.</p> <p>The holder should have long life time and durability. They should be compatible for cooling the TEM specimens with liquid nitrogen during the ion milling</p> <p>Cold stage shall be offered as standard as per the following specifications:</p> <p>Dewar and conductor rod should share the main vacuum system. 6-8 hour Dewar capacity</p> <p>Sample temperature: -The specimen can be kept in user defined temperature in the range of -150 °C to 30 °C or better, during milling. A mechanism to measure the relevant temperature should be provided. The cooling/warm-up of the specimen's should be done rapidly (~30-45 minutes) and in-built mechanism for this operation should be provided.</p> <p>Electronic temperature regulation: minimum range (-180°C to + 100°C)</p> <p>Through transmission illumination of sample</p> <p>Built in Dewar heater is essential.</p>
3.	Specimen Viewing	<p>In-situ viewing: Any time without shutting down the ion guns or raising the sample into the airlock.</p> <p>Shutter: An automatic shutter shall be incorporated to reduce window contamination when not viewing the specimen.</p> <p>Sample illumination: Reflection and through transmission with the intensity set via the Touch Screen.</p> <p>A Stereo Optical Microscope 40X, 80X magnification should be supplied along with the ion milling equipment as standard.</p>
4.	Milling Termination	<p>Milling termination by elapsed timer or optional light operated Auto-Terminator.</p>
5.	User Interface	<p>A color touch-screen graphical user interface (GUI) should be supplied as standard. The GUI must be located on the front panel of the system for easy access and viewing. All system functions (gun settings, gas flow controls, stage movements, etc.) shall be controlled through this screen.</p> <p>Remote access to the system must be available through a network connection. The communication protocols will be used for monitoring the system's status, starting, pausing, and/or stopping the milling process.</p>
6.	Vacuum System and vacuum reading	<p>The vacuum system shall be totally self-contained within the enclosure.</p> <p>A totally oil-free vacuum system, pumping with turbo pump and oil free backing pump</p> <p>Work chamber base pressure: ~1E -6 Torr</p> <p>Operating pressure: ~ 1E -5 Torr.</p> <p>Suitable gauges to monitor the vacuum levels in main chamber</p>

		and baking pump. Vacuum gauge should be present in the chamber area to read the vacuum in the specimen preparation area Sample exchange through air lock
7.	Power	230 V, 50 Hz, single phase
8.	Cooling	The system shall be air cooled only, no water cooling should be required.
9.	Documentation	The detailed user instruction manual, operation/instruction manual, trouble shooting and maintenance manual and wiring diagrams in English should be supplied free of cost along the system. A list of installation of similar equipment in the country and their current performance report should be submitted along with the bid.
10.	a) Installation/ Commissioning  b) Warranty	a) The equipment should be installed in the laboratory without additional cost. Also, two scientists should be trained in the laboratory. b) 36 months warranty from the date of acceptance of the equipment. c) Item should be quoted with DPU, Department of Metallurgical Engineering, IIT(BHU), Varanasi. It should include customs clearance and miscellaneous duties at the port of entry. However, the custom duty payment will be made by IIT (BHU) as per actual against received challan from the clearance agent/seller.
11.	Spare/ consumable	Consumables should be provided in sufficient quantities along with the main instrument. The name of each consumable and their quantities should be mentioned separately. Cross-section sample preparation kit also should be provided with the instrument.

#### **Other Terms and Conditions:**

1. All equipment must be compatible with Indian electrical standards and codes. Engineering documentation on the physical sizes and weights of all major and minor components must be submitted.
2. Tender Specific Manufacturer Authorization Form from OEM Required.
3. The Institute reserves the right of accepting or rejecting any/all quotations without assigning any reason thereof.
4. All prices should be DPU Dept. of Metallurgical Engineering, Indian Institute of Technology (BHU), Varanasi
5. Installation by Factory Trained Service Engineer is mandatory.
6. The bidder must submit a certificate on their letter pad clearly stating that they have not quoted lower rate to any government organization/ PSU/ autonomous bodies/ IITs/NITs etc. what they have quoted for IIT (BHU) against this tender. Please note that if at any point of time it is found that the submitted certificate is falsified the bid will be rejected.

**Dr. Joysurya Basu**  
**Principal Investigator**  
**Project Code: R&D/SA/DST-FIST/Met./Scm./20-21/01**  
**Department of Metallurgical Engineering, IIT (BHU),**  
**Varanasi-221005, U.P., India**

# **TECHNICAL COMPLIANCE STATEMENT**

**Annexure- II**

## **TECHNICAL COMPLIANCE STATEMENT**

(To be submitted by bidder duly filled)

### **Analytical Transmission Electron Microscope**

S. No.	Parameters	Desired Specifications	Whether the instrument complies with the required specification (Yes /No/ Better)	If no or better specification, then provide your comment accordingly
1.	Item Name/Quantity	Analytical High Resolution Transmission Electron Microscope, 1 No.		
2.	Accelerating Voltage	200 kV-user changeable either in steps or continuously without intervention of any service engineer. The condenser should be aligned at least for two voltages as specified by the user at no extra cost. The voltages are 120 kV and 200 kV for a 200 kV microscope. The lens data should be provided by the OEM to the user for the two above mentioned voltages. Minimum step size should be $\leq 50$ V. HT variation should be quick and should be possible by the user at the site of the installation.		
3.	Electron Source	Field Emission Gun with energy spread $\leq 0.8$ eV or better. The source should be compatible with all the designed accelerating voltages as mentioned in point 2 of the tender. The warranty period of the electron source should be included in the warranty period of the microscope. During the warranty period the replacement of FEG source is the responsibility of the supplier within the time limit as specified in the warranty section of the tender. Installations in the country should be mentioned along with their performance.		
4.	Resolution and spot size	Point to point resolution in TEM mode should be $\leq 0.25$ nm or better, in the STEM mode the point to point resolution should be $\leq 0.16$ nm or better. Failure to comply with this requirement may lead to rejection of the bid. The quoted resolution should be guaranteed at the customer site.		
5.	Magnification	i) TEM Magnification: Range 500x to 1.0 Mx or higher ii) STEM Magnification: Range 5000x to 150 Mx or higher		
6.	Operation Modes	The TEM and the STEM should be fully digital microprocessor controlled with		

		<p>following modes. Hardware and software required for all the following imaging and diffraction modes should be in-built and activated.</p> <p>BF, DF, HRTEM, STEM-BF, STEM-DF, HAADF (8 or more segmented detector), ABF, ADF, DPC, SAED, CBED, LACBED, NBD, STEM-EDS</p>		
7.	Permissible Aberration	<p>i) Spherical aberration <math>\leq 1.5</math> mm or better</p> <p>ii) Chromatic aberration <math>\leq 2</math> mm or better</p>		
8.	Cooling System	Close circuit automatic temperature and flow rate-controlled water-cooled chillers and air compressors should be supplied with the microscope at no extra cost for smooth operation.		
9.	Lens System	<p>System consisting of condenser lens, objective lens, diffraction, intermediate and projection lens.</p> <p>Condenser Lens should have optimum thermal stability and image drift.</p> <p>Objective Lens:</p> <p>The objective lens system should allow different types of holders including large specimen tilt for tomographic experiments. It should allow the specimen to be constant at the eucentric position at different operating modes even while spectral mapping.</p> <p>Objective lens should have wide gap pole piece to accommodate different types of special holders.</p> <p>It should have activated Lorentz lens for field free imaging of magnetic samples and Lorentz microscopy</p> <p>Rotational calibration of the lenses should be done at the site of installation by company approved service engineers and it should be provided to the users. The standard samples for different calibration should be provided to the user at no extra cost.</p>		
10.	Vacuum System	Microscope should have oil free vacuum system. The vacuum system should have fail-safe mechanism with suitable electronics interlock. Software based continuous monitoring and display of pressure should be there.		
11.	Specimen chamber	<p>Goniometer maximum tilt should be <math>\pm 70</math> (<math>\pm 1.0</math> mm) degrees or higher (maximum goniometer tilt under the provided objective lens assembly should be spelt out); X movement range – 2 mm in total or more; Y movement range – 2 mm in total or more; Z movement range – 0.20 mm in total or more; Specimen grid size 3 mm; Microscope should have a fully eucentric goniometer with all 5 axis motorized; TEM stage should be stable with maximum drift 0.5</p>		

		nm/min or better; Facility for recording specific specimen translation position as reference point in memory. Dedicated pumping system for specimen/airlock chamber should be provided.		
12.	STEM detector	<p>STEM system should have bright field (BF), Annular Bright Field (ABF), dark field (DF)/Annular Dark Field (ADF) and high-angle annular dark field (HAADF) detectors all in activated condition with required hardware and software. Differential phase contrast imaging capability should also be activated and included.</p> <p>Should have an ability to acquire BF/ABF, ADF, LAADF, HAADF and differential phase contrast images simultaneously and also should be multi segmented with at least 8 segments or more.</p>		
13.	Recording System	<p>1. Bottom Mounted, retractable, EELS compatible high resolution CMOS camera of minimum 4k*4k pixel @ 25 fps or better with full resolution of 4k*4k</p> <p>2. Camera speed should be 25fps or better with full resolution of 4k*4k. sensor active area should be <math>\geq 3200 \text{ mm}^2</math> or better with 14micron pixel size or better having DQE of greater than or equal to 9% or better at <math>\frac{1}{2} Nq.</math> at 200kV.</p> <p>3. Camera should be usable at 80-200 kV HT range</p> <p>4. User friendly software for astigmatism correction at high magnification for HRTEM study. The output images should be compatible with commercial image analysis software with annotated scale bar, magnification etc. Facility for linear measurement for diffraction pattern analysis.</p> <p>5. The software should include online (real time drift correction at 4k x 4k, and Live FFT for astigmatism correction) and offline data processing features such as FFT and full support for real space (image mode) and reciprocal space (diffraction mode) calibrations.</p> <p>6. The camera should be supported by a separate computer of appropriate capacity, so that live video image acquisition and storage in hard-disk is possible.</p> <p>7. Additional iMac should be provided with 24 inch retina display, with 512 GB SSD memory for offline data analysis</p>		



		and simulation with minimum 8 GB RAM.		
14.	Window less EDS Detector	<p>Window less multiple (two or more) Silicon Drift Detector EDS of active area <math>\geq 60 \text{ mm}^2</math>; Energy Resolution at Mn-K<math>\alpha</math> should be at least 136 eV at 10,000 spectra/s or better; Capability to detect elements with atomic number <math>&gt;5</math> (i.e. from B onwards); Suitable for quantification of elements; Capability of auto-protection in case of vacuum loss or high electron flux.</p> <p>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).</p> <p>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 EDS should be operable through the same GUI of the imaging system.</p> <p>The calibration standards for EDS should be provided. The supplier should arrange for seamless interfacing, software, installation and commission for EDS.</p>		
15.	Anti-Contamination Device	Liquid nitrogen based anti-contamination device at least 100 hours to suppress specimen contamination should be provided.		
16.	Sample holders	<p>High visibility X-ray low-background Double-tilt Holder- 1 No.;</p> <p>Single-tilt Holder - 1 No.;</p> <p>Double TILT Holder: 1 No.</p>		
17.	User Interface	<p>Fully computer-controlled system with window/Mac based software for operating the Microscope along with keyboard, mouse.</p> <p>Manual control panel using knobs, sample movement by track ball or joystick</p> <p>Control Panel and Joystick-Control panel including multifunction; keys/knobs for control and adjustment of TEM parameters (focus, magnification etc.) and manual joystick control for stage in X,Y,Z tilt and rotation directions</p>		
18.	Work Station and Software	Latest desktop system with sufficient USB ports and windows/Mac compatible operating system to operate		

		<p>the microscope and all attachments and 24 inch or higher HD LED monitor. Licensed software should be provided by the company. All software used to operate the instrument, acquire and process the data should be licensed and should be factory preloaded. Remote license should be provided to monitor and facilitate applicable remote servicing online.</p> <p>Complete software for image analysis, topography, morphology, dynamic picture recording, and image manipulation for separation of different images, super posing and subtraction. Image file in suitable format with all information embedded in it and it should be convertible to JPEG, TIFF &amp; BMP formats. Backup software must be provided on optical media. Any further version of the software and updates must be provided free of cost during the warranty period.</p> <p>Additional one windows and one mac computer with latest specifications, preloaded with the appropriate softwares and latest version of Adobe photoshop should be provided for offline data analysis.</p>		
19.	Manual	One set of instruction manual and service manual (both hard and soft copy in English) should be supplied with the equipment.		
20.	Pre-Installation requirements	Complete technical details of pre-installation requirements should be furnished along with the technical bid to ensure quoted resolution. IIT (BHU), Varanasi will only provide the installation room, air-conditioning units and required electrical outlets and water connections. Vendors must conduct the site survey before installation at no additional cost. Vendor should provide SF <sub>6</sub> , N <sub>2</sub> or any other gas that might be needed for complete installation and smooth functioning of the microscope.		
21.	Installation	Installation, complete interfacing of the system with its subsystems, and commissioning is to be carried out by the vendor's factory-trained engineers, followed by a demonstration of the system's performance to the user's complete satisfaction		
22.	Training	The manufacturer/supplier of HRTEM should provide five days onsite training initially during installation followed by regular follow up training every six months during the period of extended warranty on mutually convenient dates for hardware, software and application to the laboratory personnel in the installation, operation and maintenance		

		of the instruments.		
23.	Warranty	<p>System should be covered for comprehensive warranty for 1 years from the manufacturer including FE gun maintaining the specified resolutions at the level same as during the time of installation. All parts including spares should be covered under the warranty and this fact should be clearly and explicitly specified in the bid document. Additional four years warranty after the completion of standard one-year warranty should be quoted separately on yearly basis. The comprehensive Warranty should cover:</p> <ol style="list-style-type: none"> <li>1. All parts including accessories, spares, and labor on site including shipment at the site of installation.</li> <li>2. Free maintenance and service on site or at factory with no cost, and</li> <li>3. Regular up-gradation of software till the warranty is not over.</li> <li>4. Warranty period should start from the date of handover of the machine.</li> </ol>		
24.	Accessories	Chiller/compressor/UPS with Battery pack and other accessories as required should be included in the offer and should be manufactured by the vendor or internationally reputed manufacturer.		
25.	Power supply	Should meet Indian Power standards preferably without use of external converters		
26.	Support and service	<ol style="list-style-type: none"> <li>1. The manufacturer/supplier should have company trained and authorized engineer to address on-site service request within 48 hours. Any delay beyond 120 hours due to the unavailability of manpower would get added to the warranty period.</li> <li>2. The manufacturer should have provision to supply repair parts in foreign currency through direct order from IIT (BHU), Varanasi after the expiry of the warranty period.</li> <li>3. The repair issues must be attended to within 2 business days of reporting the issue. In case the parts are required to be imported for repairs, the same should be made available within 2 weeks from the date of reporting of the issue.</li> </ol>		
27.	Compliance Statement	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 explained. 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.		
28.	Required Documents along with technical specifications	The supplier must provide a comprehensive list of users of similar system in India and abroad. They should also submit the name(s) of the service engineer(s) employed by them who is/are competent in maintenance and servicing the equipment along with their locations in India.		
29.	Price	DPU Department of Metallurgical Engineering, IIT (BHU) should be quoted. The insurance for the whole system is for the factory warehouse to IIT BHU. This includes the responsibility of custom clearance and other miscellaneous duties at the port of entry. However, the custom duty payment will be made by IIT (BHU) as per actual against received challan from the clearance agent/seller.		
30.	Delivery Time	Delivery must be completed within ten months from the date of the order being placed.		
31.	Additional Terms	(32a) Compliance statement: With soft copy - point wise according to our document. (32b) User List: Provide user list with contact (address and Phone anywhere in India or abroad) details where the quoted model and/or similar systems have been installed in last 05 years. (32c) Original documents supporting the specifications should be provided.		
32.	Technical expertise criteria	As the system is likely to be heavily used by multiple users across the country, it is desirable that the supplier has installed at least 10 or more, fully-functional, equivalent set-up in India and several (>40) equivalent systems across the world. It is essential to enclose the information related to installation in India and worldwide of similar setup along with feedback and performance report from at least 5 users in India and 10 different users worldwide.		
33.	Installation	The entire process of installation, interfacing of the main system with its subsystems, and commissioning should be carried out by well-trained and		

		technically competent engineers from the supplier. After installation, a complete demonstration of all the features of the HRTEM set-up should be included using the samples provided by the end-user, and the demonstration should meet the expectation of the end-users with complete satisfaction.		
34.	User application training	The supplier should arrange for a basic operational training to minimum 5 users after installation and hand over A first phase onsite application training should be arranged by the supplier by an Application expert. A second phase advanced application training should be arranged on-site by the supplier after 6 months with a mutually agreed dates.		
Optional Items (Should be quoted separately)				
1.	Errand Boy	The supplier should appoint an errand boy for five years for carrying out day to day activities of the microscope for 5 years with the mutual consent of the user.		

## **Ion Beam Milling System**

1.	Item Name/Quantity	Ion beam milling system, Quantity: 1	Whether the instrument complies with the required specification (Yes /No/ Better)	If no or better specification, then provide your comment accordingly
2.	Ion-guns	<p>Two ion guns each with independently adjustable gas control utilizing mass flow controllers to permit either rapid milling or slow precise ion polishing. Ion beam energy shall be continuously adjustable from 100eV to 8keV or more.</p> <p>The alignment of the ion beams should be user friendly with either a fluorescent screen or a suitable mechanism. Ion beam current and operating voltage should be measurable independently.</p> <p>Ion gun should produce narrow ion beam width at the sample. Typical beam diameter and ion beam currents from each gun should be provided independently typically at 5 keV.</p> <p>The milling angle shall be continuously variable from +10 Deg to –10 Deg and fully adjustable during operation. It should be clearly mentioned whether it is motorized or not.</p> <p>The ion guns shall have no consumable parts or very long life time. Typically, greater than 30,000 hours of continuous operation.</p> <p>The current range should be variable from 0 to 100 micro Amps.</p> <p>The current should be measurable for each gun independently and measured at the gun.</p> <p>Special Operational Mode for preparing cross sectional samples for TEM Analysis should be offered as standard.</p> <p>Ion Gun Energies for both the ion gun should be independently controlled.</p>		
2.	Stage and Specimen Holders	<p>A specimen exchange mechanism shall be incorporated in the system to permit loading or unloading of samples without venting the work chamber to atmosphere. Specimen stage should allow rapid transfer of specimens (~1-2 minutes).</p> <p>The Specimen stage should have provision for the rotation of the specimens during milling. Rotational speed shall be continuously variable from 0 – 5 rpm or more.</p> <p>Provision of a mechanism for Sector</p>		

		<p>milling (i.e, milling the specimens from only one side or any side) over a range of 45 to 90 degrees should be available. The mechanism should permit the preparation of cross-sectional TEM specimens of multilayer's without significant milling of the glue-line (or bonding layer used to prepare cross-sections).</p> <p>The Stage shall incorporate X, Y motion to assist the user in positioning the specified mill location at the center of the beam polishing area. The minimum stage travel shall be~ +/-0.5 mm (i.e. ~ 1 mm in total) in X and Y directions. Please note that it should be possible to load the sample in ion milling tool for X &amp; Y Alignment while the sample is mounted on the specimen post.</p> <p>The specimen holder should be able to hold 3 mm diameter TEM specimens by either clamping mechanism or sticking mechanism. For loading unloading of the sample in specimen holders, suitable user-friendly mechanism should be provided. Also they can be rapidly and easily transferred in to the ion beam thinning equipment.</p> <p>Specimen heating: A glue-type specimen holder shall be supplied to optimize heat dissipation.</p> <p>The holder should have long life time and durability. They should be compatible for cooling the TEM specimens with liquid nitrogen during the ion milling</p> <p>Cold stage shall be offered as standard as per the following specifications:</p> <p>Dewar and conductor rod should share the main vacuum system. 6-8 hour Dewar capacity</p> <p>Sample temperature: -The specimen can be kept in user defined temperature in the range of -150 °C to 30 °C or better, during milling. A mechanism to measure the relevant temperature should be provided. The cooling/warm-</p>		
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		<p>up of the specimen's should be done rapidly (~30-45 minutes) and in-built mechanism for this operation should be provided.</p> <p>Electronic temperature regulation: minimum range (-180°C to + 100°C)</p> <p>Through transmission illumination of sample</p> <p>Built in Dewar heater is essential.</p>		
3.	Specimen Viewing	<p>In-situ viewing: Any time without shutting down the ion guns or raising the sample into the airlock.</p> <p>Shutter: An automatic shutter shall be incorporated to reduce window contamination when not viewing the specimen.</p> <p>Sample illumination: Reflection and through transmission with the intensity set via the Touch Screen.</p> <p>A Stereo Optical Microscope 40X, 80X magnification should be supplied along with the ion milling equipment as standard.</p>		
4.	Milling Termination	Milling termination by elapsed timer or optional light operated Auto-Terminator.		
5.	User Interface	<p>A color touch-screen graphical user interface (GUI) should be supplied as standard. The GUI must be located on the front panel of the system for easy access and viewing. All system functions (gun settings, gas flow controls, stage movements, etc.) shall be controlled through this screen.</p> <p>Remote access to the system must be available through a network connection. The communication protocols will be used for monitoring the system's status, starting, pausing, and/or stopping the milling process.</p>		
6.	Vacuum System and vacuum reading	<p>The vacuum system shall be totally self-contained within the enclosure.</p> <p>A totally oil-free vacuum system, pumping with turbo pump and oil free backing pump</p> <p>Work chamber base pressure: <math>\sim 1\text{E}-6</math> Torr</p> <p>Operating pressure: <math>\sim 1\text{E}-5</math> Torr.</p> <p>Suitable gauges to monitor the vacuum</p>		



		<p>levels in main chamber and baking pump.</p> <p>Vacuum gauge should be present in the chamber area to read the vacuum in the specimen preparation area</p> <p>Sample exchange through air lock</p>		
7.	Power	230 V, 50 Hz, single phase		
8.	Cooling	The system shall be air cooled only, no water cooling should be required.		
9.	Documentation	The detailed user instruction manual, operation/instruction manual, trouble shooting and maintenance manual and writing diagrams in English should be supplied free of cost along the system. A list of installation of similar equipment in the country and their current performance report should be submitted along with the bid.		
10.	<p>a) Installation/Commissioning</p> <p>b) Warranty</p>	<p>d) The equipment should be installed in the laboratory without additional cost. Also, two scientists should be trained in the laboratory.</p> <p>e) 36 months warranty from the date of acceptance of the equipment.</p> <p>f) Item should be quoted with DPU, Department of Metallurgical Engineering, IIT(BHU), Varanasi. It should include customs clearance and miscellaneous duties at the port of entry. However, the custom duty payment will be made by IIT (BHU) as per actual against received challan from the clearance agent/seller.</p>	g)	h)
11.	Spare/consumable	Consumables should be provided in sufficient quantities along with the main instrument. The name of each consumable and their quantities should be mentioned separately. Cross-section sample preparation kit also should be provided with the instrument.		

## **SECTION 9**

## **ANNEXURE III**

### **PREVIOUS SIMILAR ORDER EXECUTED**

The bidder give the details of purchase orders identical or similar equipment supplied to any IITs/NITS/Govt. Offices/PSUs/Govt. Funded Universities/ Govt. Funded Autonomous Bodies/Govt. Bodies/ Deemed University as per below Format for the period of 1st April 2017 to 31st March 2023.

Name of the Firm \_\_\_\_\_

Order placed by (Full address of Purchaser)	Order No. and Date	Description and quantity of ordered equipment	Value of Order	Date of completion of delivery as per contract	Remarks indicating reasons for late delivery, if any and justification for price difference of their supply order & those quoted to us	Has the Equipment being installed satisfactorily (Attach a Certificate from the Purchaser/ Consigner)	Contact Person along with Telephone No., Fax No. and e-mail address.

*(Kindly enclose the scan copy of aforementioned purchase orders along with satisfactory installation reports)*

#### **Details of Technical Expert**

<b>Name of application specialist / Service Engineer who have the technical competency to handle and support the quoted product during the warranty period.</b>		
<b>Name of the organization</b>	<b>Name of Contact Person</b>	<b>Contact No.</b>

Signature and Seal of the Manufacturer / Bidder \_\_\_\_\_

Place : \_\_\_\_\_

Date : \_\_\_\_\_

**BID SUBMISSION****Online Bid Submission:**

The Online bids (complete in all respect) must be uploaded online in **two** Envelops as explained below:-

Envelope – 1 (Following documents to be provided as single PDF file)			
Sl. No.	Document	Content	File Types
1.	Technical Bid	Technical Compliance Sheet, compliance sheet of essential pre bid criteria	.PDF
2.		Organization Declaration Sheet	.PDF
3.		Checklist, Tender Acceptance, Tender Form, Annexure I etc.	.PDF
4.		List of organizations/ clients where the same products have been supplied during 1 <sup>st</sup> April 2017 to 31 <sup>st</sup> March 2023 along with their contact number(s). (Annexure-III)	.PDF
5.		Technical supporting documents in support of all claims made at Annexure-I	.PDF
6.		EMD/Bid Security Declaration Form as per Annexure-VII and Tender fee submission proof	.PDF
7.		Certificate as per Annexure VI on the letterhead of the company	.PDF
8.		Brochure of quoted product, Other Documents, if any which are not covered above	.PDF
Envelope – 2			
Sl. No.	Document	Content	
1.	Financial Bid	Price bid Form should be submitted in PDF format.	.PDF
2.		BoQ in .xls Format	.XLS
3.		BoQ in .pdf Format*	.PDF

Note : In case any difference arises between the price quoted in BoQ in .xls format and BoQ in .pdf format, the highest quoted price between the two will be considered for the purpose of financial evaluation of bid.

**ORIGINAL EQUIPMENT MANUFACTURER (OEM)**  
**Manufacturing Authorisation Form (MAF)**  
**(On Letter Head of Manufacturer)**

Tender No. :- ..... Date:- .....

**To**  
**Dr. Joysurya Basu**  
**Principal Investigator**  
**Project No: R&D/SA/DST-FIST/Met/Scm./20-21/01**  
**Department of Metallurgical Engg,**  
**IIT (BHU), Varanasi-221005**

Dear Sir,

We manufactures of original equipment at (.....address of factory.....) do hereby authorize M/s (Name and address of Agent) to submit a bid, negotiate and receive the order format against your tender enquiry. M/s. .... is authorized to bid and conclude the contract in regard to this business. We hereby extend our full guarantee and warranty as per clause.....of the terms and conditions NIQ for the goods and services offered by the above firm.

Yours Faithfully,

(Name)

(Name & Seal of Manufacturers)

**DECLARATION**

**To,  
Dr. Joysurya Basu  
Principal Investigator  
Project No: R&D/SA/DST-FIST/Met/Scm./20-21/01  
Department of Metallurgical Engg,  
IIT (BHU), Varanasi-221005**

**We certify as under:**

We have read the clause regarding restrictions on procurement from a bidder of a country which shares a land border with India and on sub-contracting to contractors from such countries, and solemnly certify that we fulfill all requirements in this regard and are eligible to be considered.

We certify that:

(a) We are not from such a country or, if from such a country, we are registered with the Competent Authority (copy enclosed).

and;

(b) We shall not subcontract any work to a contractor from such countries unless such contractor is registered with the Competent Authority.

Yours faithfully,

(Signature of the Bidder, with Official Seal)

**BID SECURING DECLARATION FORM**

**(Letterhead of the bidder)**

**To**

**Dr. Joysurya Basu**

**Principal Investigator**

**Project No: R&D/SA/DST-FIST/Met/Scm./20-21/01**

**Department of Metallurgical Engg,**

**IIT (BHU), Varanasi-221005**

I/We. The undersigned, declare that:

I/We understand that bids must be supported by a Bid Securing Declaration.

I/We accept that I/We may be disqualified from bidding for any contract with IIT(BHU), Varanasi for a period of two years from the date of notification if I am /We are in a breach of any obligation under the bid conditions, because I/We

a) have withdrawn/modified/amended, impairs or derogates from the tender, my/our Bid during the period of bid validity or its extended period, if any; or

b) having been notified of the acceptance of our Bid by the purchaser during the period of bid validity

(i) fail or refuse to execute the contract, if required, or

(ii) fail or refuse to furnish the Performance Bank Guarantee, in accordance with the Instructions to Bidders.

c) If the bidder is found indulging in any corrupt, fraudulent or other malpractice in respect of the bid; or

d) If there is a discrepancy between words and figures quoted by the bidder then in that case the amount quoted in words will be treated as final.

I/We understand this Bid Securing Declaration shall cease to be valid if I am/we are not the successful Bidder, upon the earlier of (i) the receipt of your notification of the name of the successful Bidder; or (ii) thirty days after the expiration of the validity of my/our Bid.

Signed:

(Insert signature of person whose name and capacity are shown in Bid Securing Declaration)

Name:

(insert complete name of person signing the Bid Securing Declaration)

Duly authorized to sign the bid for an on behalf of

(insert complete name of Bidder)

Dated on .....day of..... (insert date of signing)

Corporate Seal (where appropriate) (Note: In case of a consortium, the Bid Securing Declaration must be in the name of all partners to the consortium that submits the bid).