



**INTERNATIONAL ADVANCED RESEARCH CENTRE FOR
POWDER METALLURGY AND NEW MATERIALS (ARCI)**

Balapur P.O, R.R. District, Hyderabad – 500 005, Telangana, India

Tel: 040-24452326, Fax: 040-24442699

Web Site: www.arci.res.in eMail: stores@arci.res.in

Tender No. SC20190109/PO

Date: 27.12.2019

e-TENDER DOCUMENT

**PROCUREMENT, INSTALLATION AND COMMISSIONING
OF HIGH TEMPERATURE UNIVERSAL TRIBOMETER
WITH MICRO SCRATCH TESTING FACILITY**

1.	EMD (Earnest Money Deposit/Bid Security)	Rs 4,50,000/-
2.	Tender Processing Fee	Nil
3.	e-Tender document published date	27.12.2019
4.	Bid documents can be accessed from	https://eprocure.gov.in/eprocure/app
5.	Pre-bid queries submission date	27.12.2019 to 02.01.2020
6.	Date of Pre-bid meeting	03.01.2020 at IST 14:30 hrs.
7.	Bid submission start date and time	08.01.2020 at IST 0900 hrs.
8.	Bid submission end date and time	28.01.2020 before IST 15:30 hrs.
9.	Online Bids opening date and time (for cover 1 EMD)	30.01.2020 at IST 11:00 hrs.



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Instructions to Bidders

Table of Contents

Sl. No.	Description	Page No.
1.	Notice for inviting e-tender	3-5
2.	Special Instructions for online bid submission	6-8
3.	Part – 1: Technical Bid -Terms and conditions	9-14
4.	Part – 2: Earnest Money Deposit-Terms and Conditions	15-16
5.	Part – 3: Price Bid -Terms and Conditions	17-20
6.	Declaration by Vendor	21
7.	Scope of work (Annexure – I)	22-29
8.	Technical Compliance Statement (Annexure II)	30-36
9.	Format for Integrity Pact (Annexure – III)	37-39
10.	Checklist	40



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NOTICE FOR INVITING OPEN E-TENDER

International Advanced Research Centre for Powder Metallurgy and New Materials (henceforth referred to as ARCI) is an Autonomous Research and Development Centre of Department of Science and Technology (DST), Government of India with main campus at Hyderabad and with operations in Chennai and Gurugram.

ARCI would like to procure the following equipment. The Technical Specifications, Schedule of Requirements and Allied Technical details are given in Part-1 of tender document.

SERVICE: PROCUREMENT, INSTALLATION AND COMMISSIONING OF HIGH TEMPERATURE UNIVERSAL TRIBOMETER WITH MICRO SCRATCH TESTING FACILITY

You are invited to submit your most competitive online quotation through CPP Portal (Central Public Procurement Portal) website <https://eprocure.gov.in> on or before the prescribed due date. Manual bids shall not be accepted except for the original documents, if any mentioned in this tender.

Complete tender can be viewed and submitted through <https://eprocure.gov.in/eprocure/app>. To use the Electronic tender portal <https://eprocure.gov.in/eprocure/app> the bidders need to register on the portal.

Tender Enquiry No: (Case No.) SC20190109/PO date 27.12.2019

- Last date and time of submission of Tender online (EMD, Technical Bid, and Price Bid): **28.01.2020 before 15:30 hrs.**
- EMD should be in the form of Demand Draft drawn in favour of **Director, International Advanced Research Centre, payable at Hyderabad.**
- Services to be provided at:

International Advanced Research Centre for Powder Metallurgy and New Materials, Balapur Post, Hyderabad – 500 005, Telangana, India.

- Estimated value: **INR 1,80,00,000.00/-**

- **Estimated Delivery period: 04 Months from the date of Purchase Order.**

Validity of Bid

Quotation should have minimum validity of **120 days** from the date of opening

Last date for submission: 28.01.2020 before 15:30 hrs.

The bidders are required to submit soft copies of their bids electronically on the CPP Portal before the last date stated above using valid Digital Signature Certificates.

All the tenders, in which any of the prescribed conditions are not fulfilled or incomplete in any respect are liable to be rejected.

Bidders shall select the payment option as offline to pay the EMD and enter details of the Demand Draft, etc

Pre-bid Meeting

A Pre-bid Conference shall be held on **03.01.2020 at 14:30 hours (IST) in ARCI, Hyderabad.** All prospective bidders are requested to attend the pre-bid conference to seek any clarification. In order to facilitate ARCI for proper conduct of the pre-bid meeting, it is requested to submit queries if any, by e-mail only to the e-mail address stores@arci.res.in , anirban@arci.res.in for commercial queries and manish@arci.res.in for technical queries so as to reach ARCI latest by **02.01.2020 Time: 1530 hrs** with Subject line as “**Queries for Pre-bid Conference for Tender No SC20190109/PO**”). No request for clarification or query shall be normally entertained after the pre bid conference. Should ARCI deem it necessary to amend the bidding documents as a result of a clarification, it shall do so by hosting the clarifications and amendments on the website of ARCI/ CPP Portal only for the benefit of other prospective bidders. Hence, prospective bidders are requested to follow the websites regularly.

Clarification on bid

Bidders can seek clarification as per the schedule start and end date through email IDs given below:

For technical clarifications: **manish@arci.res.in**

For commercial clarifications: **stores@arci.res.in**

Opening of the tender

- Only the Technical bid shall be opened online on the date of the tender opening. Price bids of only those firms will be considered for opening whose offer would meet all tender requirements including compliance to technical specifications and has passed all tender conditions/ technical evaluation.
- After opening of the price bids, detailed comparative statement will be generated online and the finalization of successful bidder will be done on L-1 (lowest price) basis as per CPP Portal.

Award of Contract

Contract will be awarded to successful bidder and a copy of the award of the contract will be uploaded in CPP portal after finalizing the tender.

DISQUALIFICATION OF TENDERS:

The tenders are liable for rejection in the following circumstances:

- If they are not in line with the terms and conditions of this tender notice.
- Conditional quotations
- Incomplete tenders
- Tenders without EMD
- Tenders submitted through Fax or e-mail.
- If two bid system is not followed.
- Bid received simultaneously from Indian agent on behalf of Principal/OEM and Principal/OEM itself for same item/product/services in the same tender.
- The Firm need to quote all the charges /prices as per the tender requirement, if any firm quote nil charges/consideration, the bid shall be treated as Unresponsive bid and will not be considered

Director, ARCI reserves the right to accept or reject any or all tenders either in part or in full or to split the order without assigning any reasons there for.

The original hard copies of Technical Bid documents along with EMD, supporting documents, etc., should be submitted on or before the due date to the following address:

International Advanced Research Centre for Powder Metallurgy and New Materials, Balapur Post, Hyderabad – 500 005, Telangana

IMPORTANT NOTE: Amendment, Corrigendum if any to this tender document, WILL BE HOSTED ONLY IN ARCI WEBSITE and CPP Portal and no separate Press Notification will be issued. Bidders are advised to visit our website and CPP Portal regularly to know such details.

Director, ARCI, Hyderabad

SPECIAL INSTRUCTIONS FOR ONLINE BID SUBMISSION:

Instructions to the Bidders to submit the bids online through the Central Public Procurement Portalfore-Procurement are at <https://eprocure.gov.in/eprocure/app>. The bidders must carefully follow the instructions.

- Possession of valid Digital Signature Certificate (DSC) and enrolment/registration of the contractors/bidders on the e-procurement/e-tender portal is a prerequisite for e-tendering.
- Bidder should do the enrolment in the e-Procurement site using the "Click here to Enroll" option available on the home page. Portal enrolment is generally free of charge. During enrolment/registration, the bidders should provide the correct/true information including valid e-mail-id. All the correspondence shall be made directly with the contractors/bidders through e-mail-id provided.
- Bidder need to login to the site through their user ID/ password chosen during enrolment/registration.
- Then the Digital Signature Certificate (Class III Certificates with signing key usage) issued by NIC/SIFY/TCS/nCode/eMudra or any Certifying Authority recognized by CCA India on e-Token / Smart Card, should be registered.
- The DSC that is registered only should be used by the bidder and should ensure safety of the same.
- Contractor / Bidder may go through the tenders published on the site and download the required tender documents/ Annexures for the tenders he/she is interested.
- After downloading / getting the tender document/ Annexures/ Appendices, the Bidder should go through them carefully and then submit the documents as asked, otherwise bid will be rejected.
- If there are any clarifications, this may be obtained online through the tender site, or through the contact details. Bidder should take into account the corrigendum / addendum published before submitting the bids online.
- Bidder then logs in to the site through the secured log in by giving the user id/ password chosen during enrolment/registration and then by giving the password of the e-Token/ Smart Card to access DSC.
- Bidder selects the tender which he/she is interested in by using the search option & then moves it to the 'my tenders' folder.
- From my tender folder, he selects the tender to view all the details indicated.
- It is construed that the bidder has read all the terms and conditions before submitting their offer. Bidder should go through the tender Annexures and appendices carefully and upload the documents as called for; otherwise, the bid will be rejected.
- Bidder, in advance, should get ready the bid documents to be submitted as indicated in the tender document/ Annexure and generally, they can be in PDF/xls/rar/zip/dwf formats. If there is more than one document, they can be clubbed together and can be provided in the requested format. Each document to be uploaded through online for the tenders should be less than 2 MB. If any document is more than 2MB, it can be reduced through zip/rar and the same can be

uploaded, if permitted. Bidders Bid documents may be scanned with 100 dpi with black and white option. However if the file size is less than 1 MB the transaction uploading time will be very fast.

- Bidder should take into account the corrigendum / addendum published from time to time before submitting the online bids.
- The Bidders can update well in advance, the documents such as certificates, annual report details etc., under My Space option and these can be selected as per tender requirements and then send along with bid documents during bid submission. This will facilitate the bid submission process faster by reducing upload time of bids.
- While submitting the bids online, the bidder reads the terms & conditions and accepts the same to proceed further to submit the bid packets.
- Bidder should submit the EMD as specified in the tender. The original should be posted/couriered/given in person to the Tender Inviting Authority, within the bid submission due date & time for the tender. **Scanned copy of the instrument should be uploaded as part of the offer.**
- The bidder has to select the payment option as offline to pay the EMD as applicable and enter details of the instruments
- The details of the DD/BC, physically sent, should tally with the details available in the scanned copy and the data entered during bid submission time. Otherwise submitted bid will not be acceptable.
- The bidder has to digitally sign and upload the required bid documents one by one as indicated. Bidders to note that the very act of using DSC for downloading the bids and uploading their offers shall be deemed to be a confirmation that they have read all sections and pages of the bid document including General conditions of contract without any exception and have understood the entire document and are clear about the requirements of the tender requirements.
- The bidder has to upload the relevant files required as indicated in the covered content. In case of any irrelevant files, the bid will be rejected.
- **If the price bid format is provided in a spread sheet file like BoQ_xxxx.xls, the rates offered should be entered in the allotted space only and uploaded after filling the relevant columns. The Price Bid/ BOQ template must not be modified/replaced by the bidder, else the bid submitted is liable to be rejected for this tender.**
- The bidders are requested to submit the bids through online e-tendering system to the Tender Inviting Authority (TIA) well before the bid submission end date & time (as per Server System Clock). The TIA will not be held responsible for any sort of delay or the difficulties faced during the submission of bids online by the bidders at the eleventh hour.
- After the bid submission (i.e after Clicking "Freeze Bid Submission" in the portal), the acknowledgement number, given by the system should be printed by the bidder and kept as a record of evidence for online submission of bid for the

particular tender and will also act as an entry pass to participate in the bid opening date.

- The time settings fixed in the server side & displayed at the top of the tender site, will be valid for all actions of requesting, bid submission, bid opening etc., in the e-tender system. The bidders should follow this time during bid submission.
- All the data being entered by the bidders would be encrypted using PKI encryption techniques to ensure the secrecy of the data. The data entered will not be viewable by unauthorized persons during bid submission & not be viewable by any one until the time of bid opening.
- Any bid document that is uploaded to the server is subjected to symmetric encryption using a system generated symmetric key. Further this key is subjected to asymmetric encryption using buyers/bid openers public keys. Overall, the uploaded tender documents become readable only after the tender opening by the authorized bid openers. The confidentiality of the bids is maintained since the secured Socket Layer 128 bit encryption technology is used. Data storage encryption of sensitive fields is done.
- The bidder should logout of the tendering system using the normal logout option available at the top right hand corner and not by selecting the (X) exit option in the browser.
- For any queries regarding e-tendering process, the bidders are requested to contact as provided in the tender document. For any further queries, the bidders are asked to contact over phone as mentioned in the CPP website or send an email to - cppp-nic@nic.in.

PART-1
TECHNICAL BID - TERMS AND CONDITIONS

I. Vendor qualification criteria:

- A. Original Equipment Manufacturer (OEM) or authorized representatives of OEM only can quote for this tender. Vendor should submit authorization letter valid on tender date from OEM along with the quotation.
- B. The OEM should have proven expertise in manufacture and supply of the item.
- C. The bidder should provide support documents to show their customer's list and should have supplied (should be in operation till date) at least 5 systems of similar specifications in the last 3 years in India or worldwide. Performance certificate of latest of them should also be submitted with technical bid. The Supplier should also provide support documents to show their Customers' list and contact details
- D. OEM is required to submit a letter of commitment at the time of quote for supply of spares, tool, and consumables and also for efficient and prompt after sales service of the equipment for a minimum period of 10 years after the guarantee/warranty period under mutually agreed terms and conditions.
- E. The bidder shall provide the details of Service Centers and also the details of the on-site service support agency preferably with OEM trained engineers including the service personnel details, training and infrastructure to support the spares, maintenance and calibration of the complete system and sub-systems after commissioning, during and after the guarantee/warranty period.
- F. Failure to meet any of the above vendor qualification criteria may lead to disqualification of tender at technical evaluation stage itself and vendor's quotation may not be considered for procurement.
- G. The bidder shall furnish documentary evidence of their financial capability duly certified by their bank or any financial institution of repute for previous 3 years and enclose a certificate of last three-year turnover.

II. Pre dispatch inspection

- A. Pre- dispatch inspection will be done at supplier's site. Before dispatch all the features will be checked and each test on defined samples will be carried out at minimum and maximum operating conditions.
- B. The manufacturer/supplier of the unit shall demonstrate all the features as provided in **Annexure-I (Scope of supply work)**.
- C. All the utilities and manpower required for the demonstration shall be arranged by the supplier only.

- D. Demonstrate functionality of all the modules, accessories and peripheral equipment as per specifications.
- E. Certificate of conformance of the machine suiting ARCI specification from supplier's quality department need to be produced before dispatch of the machine.

III. Acceptance criteria:

- A. Demonstration of the performance of the system as per the specifications given in the technical specifications.
- B. Test will be carried out at 5 different operating conditions using the module supplied. The test conditions will be decided by ARCI during installation
- C. Submission of detailed technical, maintenance and operating manual.
- D. Necessary calibration of the various parameters needs to be done at the site of installation and training has to be imparted on the procedure to be adopted for calibration to at least two personnel from ARCI.
- E. The supplier will train ARCI scientists on site for at least 5 working days on the use of equipment and data analysis software packages supplied as part of the unit.
- F. The entire functionality of the equipment according to the specifications should be demonstrated at ARCI.
- G. On completion of operational and maintenance training for the entire system and sub-systems.

IV. Other aspects:

A. Patent Rights:

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

B. Training:

Onsite training (Operation and maintenance) for both software and hardware.

C. Utilities/Infrastructure for installation:

- a. Supplier shall indicate all the required utilities/infrastructure such as power, water, gas, etc including power backup requirements.
- b. Supplier shall provide overall dimensions of the Unit along with floor area/height of the site or building, including foundation details if any, for accommodating the Unit.
- c. The operating environment for the Unit including temperature and humidity control, anti-vibration, EMI, EMC etc. should be indicated.
- d. If any charges extra are payable for Installation and Commissioning, the same should be included in the total cost of the item as per the price schedule.

D. Manuals, software and other drawings etc.:

The following documents (Hard copy 2 sets and soft copy in CD/Flash drive/HDD) in English Language to be provided to ARCI:

- a. User manual, operation manual and maintenance manual (for mechanical, electrical and electronic hardware circuits) of the entire system and sub-systems.
- b. System administration and maintenance manual- shall cover detailed system configuration and administration with the help of sketches. The safety instructions, maintenance schedule, preventive maintenance schedule with possible errors and troubleshooting to be provided.
- c. Standard operating procedure (SOP), calibration, software manual
- d. Original software licenses for all the software included in the supply without any usages limits and time limits should be provided and backup of the software should also be provided in a CD/DVD/Flash drive.
- e. Software upgrades pertaining to the supplied Unit should be provided free of cost as and when new versions are released by the OEM.
- f. Calibration certificates as per international standard of all the artifacts. Reference standard used for the same shall be provided to ARCI.
- g. All the data and results of testing and calibration of the entire system at manufacturer's site as well as at ARCI shall be properly documented and supplied to ARCI

- h. Certificate for general compliance with standard, safety and protection. Safety and security instruction manual should be provided

E. After-sales service:

The supplier shall guarantee efficient and prompt after-sales service including the supply of the spares for a minimum period of 10 years after the guarantee/warranty period under mutually agreed terms and conditions.

F. Bought-out items:

All bought-out sub-systems and components if any should be of reputed make conforming to international standards. Make and details of all bought-out sub-systems and components shall be specified in the technical bid.

G. General Quote:

The breakup for accessories, attachments, consumables, powders, sub-systems (Powder recovery systems and vacuum cleaners) and AMC apart from the basic system, should be quoted separately as optional items and to be submitted with Technical bid (Cover 2).

List of consumables for seamless operation for next 03 (three) years should be provided and the price should be quoted as optional and to be submitted with Technical Bid (Cover 2).

Rate quoted for optional items shall not be considered for deriving L1.

Bidders shall download the Schedule of Quantities and Prices in the XLS Format and save it without changing the name of the file. Bidder shall quote their rate in figures in the appropriate cells, thereafter save and upload the file in financial bid cover (Price Bid) only. Bidder shall quote the prices in the given format BOQ_XXXX in excel sheet for online submission of bids. The Technical bid also shall be uploaded in CPP Portal in the appropriate place.

It is required to take utmost care for uploading Schedule of Quantities & Prices and any change/modification of the price schedule shall render it unfit for bidding.

If the template of Schedule of Quantities & Prices file is found to be modified/ corrupted in the eventuality by the bidder, the bid will be rejected.

H. Export License:

The supplier should clearly indicate their ability/readiness to obtain the export license /clearance from the concerned authority for the supply of the unit as per the contract specifications to ARCI.

I. Technical compliance statement:

The vendor should provide item wise details against each and every specification, Deviations if any are to be highlighted with remarks. Suppliers are required to provide the Technical Compliance Statement as per Annexure – III while submitting the Technical Bid (Cover 2).

J. Guarantee/warranty:

The system must be under guarantee / warranty for a period of minimum 03 (three) years (unconditional warranty) from the date of its satisfactory installation, commissioning, and demonstration against all manufacturing defects. If the system is found to be defective during this period the whole equipment or part thereof will have to be repaired/replaced by the supplier free of cost to ARCI. During the guarantee / warranty period, the downtime of the equipment will be recorded with the details of date and type of complaint/fault. The vendor should attend it and make the equipment operational within reasonable and stipulated time. The downtime more than the stipulated time after reporting the complaint/fault will be added to calculate cumulative downtime. The guarantee/warranty period will be extended automatically by this cumulative downtime. However, if the items are under guarantee/warranty for a period of more than three years, it may be specifically mentioned in the quotation. In case the supplier fails to rectify the defects and equipment is not put to proper function to our satisfaction, the supplier will replace the whole equipment to our satisfaction or whole money paid by ARCI on the account of purchase of the equipment will be refunded by supplier to ARCI. All the software updates during the warranty period shall be supplied, installed and trained to our personnel on real time basis at free of cost.

In case of breakdown during Guarantee/warranty period, a competent service engineer of the supplier should make as many visits as are required to rectify the problem and replace the faulty parts, without any liability of cost

K. Delivery/ time schedule:

The offer shall be accompanied by a detailed delivery time schedule showing the individual time schedule required for delivery.

L. 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. 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. In order to maintain safety of the equipment, we prefer to have wooden crating with adequate cushion inside for transportation of any goods. The material has to be dispatched with International standard packing to withstand rigors, and to avoid any transit damages.

M. Packing Instructions:

Each package will be marked on three sides with proper paint/indelible ink, the following:

- i. Purchaser Name & Address
- ii. Item Nomenclature
- iii. Order/Contract No.
- iv. Country of Origin of Goods
- v. Packing list reference number

N. 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.

For delivery of goods at the purchaser's premises, the insurance shall be obtained by the Supplier 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. The insurance shall be valid for a period of not less than 3 months after dispatch **or upto installation and commissioning of stores whichever is later.** However, in case of orders placed on FOB/FCA basis, the purchaser shall arrange insurance.

O. General instructions:

- A. The bidder should submit the scanned copy of the Technical Bid for online submission and original hard copy of all the documents must be submitted in an organized and structured manner. No brochures/leaflets etc. should be submitted in loose form. Please indicate page nos. on your quotation. The price should not be mentioned anywhere in this document.
- B. The original hard copies of Technical Bid documents along with supporting documents etc., should be submitted on or before the due date. The bidder should ensure that all the technical documents submitted through online and hard copies are one and the same. If any deviation is found, the tender is liable to be rejected.**
- C. Price Bid should be submitted online only and no other mode of submission is acceptable.**
- D. The technical offer should be complete to indicate that all products and services asked for are quoted. Each page of the bid and strikeout/corrections shall be duly signed and stamped by the bidder. Unsigned Tenders are liable to be rejected. Failure to comply with this requirement may result in the bid being rejected.
- E. The purpose of certain specific conditions is to get or procure best product/service etc. for ARCI. The opinion of Technical Committee shall be the guiding factor for technical short listing.
- F. Vendor should provide list of deliverables / bill of materials and services.

PART- 2
EARNEST MONEY DEPOSIT – TERMS AND CONDITIONS

Earnest Money Deposit (EMD) for an amount of Rs.4,50,000/- in the form of demand draft / Banker's Cheque Drawn in favour of **Director, International Advanced Research Centre, Payable at Hyderabad** should be submitted on or before the due date as part of Technical Bid. **Scanned copy of such document must be attached online along with the technical bid documents, failing which tender document would be rejected.**

No interest is payable on EMD. The EMD will be returned to the bidders(s)/Agents whose offer is not accepted by ARCI within one month from the date of the placing of the final order(s) on the selected bidder(s). EMD of the successful bidder shall be converted into performance guarantee and shall be released on submission of bank guarantee.

EMD in the form of BG is not acceptable.

Amount of EMD: Rs. 4,50,000/- in INR (Rupees Four Lakh Fifty Thousand in INR or equivalent foreign currency)

Bidder registered with Department of Micro, Small and Medium Enterprises as MSMEs and having valid NSIC registration are exempted for payment of EMD subject to submission of documentary evidences. Copies of registration certificate and other supporting documents should be submitted in Cover No. 1.

Documents required for availing exemption of EMD amount for NSIC/MSEs:

- a. MSMEs, which are specified by the Ministry of Micro, Small and Medium Enterprises under MSMED Act 2006 and Public Procurement Policy, 2012 as Manufacturing/service Enterprises should have registered with NSIC under its Single Point Registration Scheme (SPRS).
- b. The Certificate with monetary limit indicated should be valid on the scheduled date/Extended date of submission of the tender. Certificates without monetary limit will not be considered.
- c. **The items of product/services mentioned under MSME/NSIC certificate should be the same or similar to the tendered items.**
- d. The monetary limit stipulated in the certificate of MSMEs/NSIC should be equal or more than the value of work in hand awarded under MSME benefits during the financial year plus estimated cost of the Tender for availing EMD exemptions.
- e. If monetary limit is less than the value of work in hand awarded under MSME/NSIC benefits during the financial year plus estimated cost of this tender, they should obtain "Competency Certificate" from NSIC for participating in this tender as well as to avail MSME benefits.

It is mandatory for the supplier to submit valid NSIC registration certificate having the duration of the validity of the certificate, so as to apply for the exemption from submitting EMD. Non-compliance of the same, bid will be disqualified.

Note- In case the bid is submitted as an Indian arm of a foreign bidder and the eligibility conditions were met through foreign company, then the EMD exemption cannot be claimed under the MSME status of Indian arm/subsidiary. Thus a bidder who solely on its own, fulfills each eligibility criteria conditions as per the tender terms and conditions and who are having MSME Status, can claim EMD exemption.

Forfeiture of EMD:

EMD of tenderer will be forfeited, if the tenderer withdraws or amends its tender or derogates from the tender in any respect within the period of validity of its tender. Further, if the successful tenderer fails to furnish the required performance security within the specified period, its EMD will be forfeited.

PART- 3
PRICE BID – TERMS AND CONDITIONS

PRICE BID SHOULD BE SUBMITTED ONLINE ONLY AND NO OTHER MODE OF SUBMISSION IS ACCEPTABLE.

Bidders shall download the Schedule of Quantities and Prices in the XLS Format and save it without changing the name of the file. Bidder shall quote their rate in figures in the appropriate cells, thereafter save and upload the file in financial bid cover (Price Bid) only. Bidder shall quote the prices in the given format BOQ_XXXX in excel sheet for online submission of bids. The Technical bid also shall be uploaded in CPP Portal in the appropriate place.

It is required to take utmost care for uploading Schedule of Quantities & Prices and any change/ modification of the price schedule shall render it unfit for bidding.

If the template of Schedule of Quantities & Prices file is found to be modified/ corrupted in the eventuality by the bidder, the bid will be rejected.

I. Terms and Conditions:

- a) Tenders with any condition, including conditional rebate, are liable to be rejected.
- b) **The Price Bid/BOQ template must not be modified/replaced by the bidder, else the bid submitted is liable to be rejected for this tender.**
- c) **The bidder should carefully read the BOQ columns and feed the price as per the price breakup asked in the BOQ. If the quoted price is not as per the price breakup given in the BOQ, the concerned price bid will be rejected.**
- d) **For Domestic bidders, the unit price of materials is basic cost. GST, packing, forwarding, freight and insurance amount if any may be provided separately as per the BOQ.**
- e) **For Foreign bidders, the unit price of the materials is Ex-Works price and packing, forwarding and freight and insurance charges if any, may be provided separately as per the BOQ.**
- f) **Unit price should include main equipment (total system) including computer hardware and software as per the specifications in scope of the work (Annexure I).**
- g) **Total price is F.O.R. ARCI, Hyderabad or CIP/CIF, Hyderabad.**
- h) Printed conditions of the vendor submitted with the tender will not be binding on ARCI.
- i) The commercial bids of only the technically qualified bidders shall be considered for further processing.
- j) Commercial Bid (prices quoted) for main equipment should not be enclosed in the technical bid envelope. If the price quote is submitted with technical bid, the tender is liable to be rejected.
- k) **Rate for optional items are to be quoted ONLY in Technical Bid (Cover 2). Rate quoted for Optional items will not be considered for deriving L1.**
- l) The Director, ARCI reserves the right to accept the offer in full or in part or reject summarily or partly thereof.

II. Tenderer to inform himself fully

The tenderer is required to carefully examine the documents enclosed and get fully aware himself as to all conditions and matters which may in any way affect the works or the cost thereof, before submitting his offer.

If the tenderer finds any discrepancies, omissions, or contradictions in the documents or is in doubt as to the true meaning of any part, he shall at once contact in writing for an interpretation/clarification from the Director, ARCI.

The tenderer shall however not be entitled to any extension of time for submission of his tender on such account, unless the Director extends the due date.

III. Payment terms:

1. For import:

An irrevocable Letter of Credit [L/C] for 100% of the order value will be established by the purchaser in favour of the supplier, through purchaser's bank in India once the following condition is met:

Receipt of order acknowledgement and acceptance of the order.

THE ACTUAL PAYMENT TO SUPPLIER WILL HOWEVER BE RELEASED IN TWO STAGES IN THE FOLLOWING MANNER:

Payment for 90% of the order value will be made upon shipment of the equipment and negotiation of the following shipping documents through L/C:

- A) Signed Commercial Invoice - Original + 5 Copies
- B) Airway Bill/Bill of lading - Original + 5 Copies.
- C) Packing List -Original + 5 Copies
- D) Certificate of conformity from the supplier that stores/equipment has been tested by the supplier and the same meet the technical specification - Original + 3 Copies.
- E) Supplier's Certificate to the effect that the contents in each package are not less than those entered in the Invoice and the Packing List - Original + 3 Copies.

Balance 10% of the order value will be released through L/C upon submission of the following documents:

- A) Commercial Invoice for 10% order value.
- B) Final Acceptance Certificate [FAC] issued by the purchaser/authorized representative in original against satisfactory installation and commissioning of the equipment at ARCI Site.
- C) Bank Guarantee Equivalent to 10% of total order value covering warranty period of the

equipment issued or counter guaranteed by an Indian Bank clearly mentioning the relation with OEM if submitted by Indian Agent.

D) If the above-mentioned performance bank guarantee is not provided, 10% of the order value (i.e. second stage payment) will be released only after the expiry of the warranty period from the date of FAC.

2. Domestic purchase:

Payment Terms

Subject to deduction of taxes at source, if any,

90% of the goods cost + 100% taxes will be paid after receipt of the goods at our site subject to inspection & acceptance of the goods/works/commissioning by ARCI authorities.

Balance 10% will be paid against submission of Performance Bank Guarantee (i.e. 10% of the total order value excluding taxes etc.) from a Nationalized /Scheduled Bank valid till the expiry of the warranty period OR after completion of warranty period from the date of successful commissioning of equipment at ARCI.

IV. Inspection Certificate (IC)

The end user will provide inspection certificate after receipt of materials based on which payment will be released.

V. Liquidated damages (LD)

As time is the essence of the contract, the work period mentioned in the Service Order should be strictly adhered to. Otherwise, LD clause will be applicable /enforced. If the supplier fails to provide the services mentioned in the order within the stipulated period, the Director, ARCI shall without prejudice to any other right or remedy available in law, levy a penalty for such delay by way of liquidated damages, at 0.5% per week of delay or part thereof, subject to a maximum of 10% of contract value. Such LD will be deducted from any amount due or which may become due to the supplier.

VI. Order acceptance

The successful bidder, on award of contract/order, must send the contract/order acceptance in writing, within 15 days of award of contract.

VII. Award of contract:

ARCI reserves the right at the time of award of Contract to increase or decrease the quantity of items specified in the Schedule of Requirements without any change in price or other terms and conditions.

IX. Corrupt or Fraudulent Practices:

ARCI requires that the bidders who wish to bid for this project have highest standards of ethics. ARCI will reject a bid if it determines that the Bidder recommended for award has engaged in corrupt or fraudulent practices while competing for this contract. ARCI may declare a vendor ineligible, either indefinitely or for a stated duration, to be awarded a contract if it at any time it is determined that the vendor has engaged in corrupt and fraudulent practices during the execution of contract.

X. Integrity Pact:

As per directive of the Central Vigilance Commission all the government funded organizations have to adopt an Integrity pact (IP) to ensure transparency, equity and competitiveness in major Public procurement activities. The integrity pact envisages an agreement between the prospective bidders/vendors with the ARCI committing the persons/officials of both the parties i.e., ARCI and intending bidders with the aim not to exercise any corrupt practice and bring influence on any contractual aspects. Only those bidders/vendors who are willing to enter in to such an integrity pact with ARCI only have to compete in the bidding. The integrity Pact would be effective from the date of invitation of bids and continue to be in force till completion/satisfactory execution of the contract. Bidders shall submit the Integrity Pact in Technical Bid (Cover 2) as per the prescribed format given in Annexure IV.

XI. Interpretation of the clauses in the Tender Document/Contract Document:

In case of any ambiguity/dispute in the interpretation of any of the clauses in this Tender Document, Director, ARCI's interpretation of the clauses shall be final and binding on all parties.

XII. Arbitration

In case of Dispute or difference arising between the Purchaser and a domestic supplier relating to any matter arising out of or connected with this agreement, such disputes or difference shall be settled in accordance with the Indian Arbitration & Conciliation Act, 1996, the rules there under and any statutory modifications or re-enactments thereof shall apply to the arbitration proceedings. The dispute shall be referred to arbitrator appointed by the Director, ARCI. The award of the arbitrator so appointed shall be final, conclusive and binding on all parties to this order.

The venue of the arbitration shall be the place from where the purchase order/contract is issued. Notwithstanding any reference to arbitration herein, the parties shall continue to perform their respective obligations under the Contract unless they otherwise agree.

Declaration by the Vendor

(to be provided in the following format in their letter head)

It is hereby declared that I/We the undersigned, have read and examined all the terms and conditions etc. of the tender document for which I/We have signed and submitted the tender under proper authorization. It is also certified that all the terms and conditions of the tender document are fully acceptable to me/us and I/We will abide by the conditions of the tender. We have not given any printed conditions beyond the scope of this tender. It is also certified that I/We/our firm has no objection in signing the contract if the opportunity for the work against this tender is given to me/us.

Date:

Signature:

Name:

Address:

Designation:

On behalf of:

SCOPE OF WORK

PROCUREMENT, INSTALLATION AND COMMISSIONING OF HIGH TEMPERATURE UNIVERSAL TRIBOMETER WITH MICRO SCRATCH TESTING FACILITY

High Temperature Universal Tribometer with Micro Scratch test facility		
Technical Specifications		
The system should be an universal system equipped with rotary (Pin-on-disc and ball-on-disc), linear reciprocating, block on ring mode, capabilities to perform hot hardness at ambient to 1000 deg C and micro scratch test. The tribometer should operate as per ASTM standards to measure mechanical and tribological properties of materials and coatings.		
Sl. No.	Features	ARCI Specification
1	Rotary drive:	(a) Rotary Drive Module with Specimen Table (for ball on disk/plate test, Pin on disc and disk on disk/flat on flat test, 4 ball wear test)
		(b) Automatic servo loading with load range: 1-2000N or better
		(c) speed: 0.1 to 2,000 rpm
		(d) Friction force: 0.1N or better upto 1400N or better
		(e) System should be capable of performing test at both dry and lubricating conditions.
		(f) High Speed Anti-Splash Liquid Container for Rotary drive
		(g) High temperature chamber with temperature controller range from Ambient to 1000°C in dry condition and upto 400°C in lubricated condition
		(h) Shall be able to perform ASTM G99, ASTM G132 and ASTM D3702 or equivalent
		(i) Suitable indenter and holders for entire temperature range should be supplied.
2	Linear Drives:	(a) Max travel distance: 120mm or more
		(b) Speed: 0.01 to 10mm/sec or more

		(c) Lateral force: upto 400N or better
		(d) Suitable tool and holders should be provided
3	Linear - Reciprocating Drive	Reciprocating drive (for ball on flat, pin on plate, rolling-sliding)
		Speed: 0.1-60Hz or better
		Automatic servo loading with load range: 1-2000N or better
		Operating condition: both dry and lubricated
		Stroke: 1-25mm or better at applicable frequency ranges. Speed for 25mm stroke length should not be less than 20Hz
		Anti-Splash Liquid Container to perform reciprocating test under lubricated conditions
		High temperature chamber with temperature range from Ambient to 400°C with Temperature controller
		Shall be able to perform ASTM G199, ASTM G203, ASTM D204, ASTM G206 or equivalent
		Suitable indenter and holders for entire temperature range should be supplied; to hold customized specimens such as piston rings-cylinder bores
4	Piston Ring Cylinder Liner test module (ASTM G181) Should be quoted as optional	<ul style="list-style-type: none"> ● Oil Recirculation ● 40mm at 50Hz (long stroke, fast frequency) ● Install test coupons cut from real components ● Piezo Sensors ● Inline Friction, Down force, Wear
5	High Temperature Hardness	High temperature hardness tester to do high temperature materials testing at ambient temperature up to 1000°C.
		To prevent oxidation of tip and the samples the high temperature indenter should be in a sealed Chamber with inert gas.
		Automatic servo loading with load range: upto 2000N or better
		Suitable indenter and holders for entire temperature range should be supplied.

6	Micro Scratch test	<p>a. Detailed Specifications:</p> <ol style="list-style-type: none"> i. Lateral force: 20 N or better ii. Lateral force bit resolution: 10μN or better iii. Max scratch length: 50mm or more iv. Scratch speed: 0.5 to 500 mm/min v. Maximum contact force for scanning: upto 10 mN <p>b. Normal Loading:</p> <ul style="list-style-type: none"> • Normal Force Range: 10mN to 20N/higher • Maximum Force: 20N or higher • Minimum Contact Force: 10 mN or less • Loading Rate: 100 mN/min or higher • Normal Load Noise Floor: 250 μN or lower • Normal Force Bit Resolution: 6 μN or lower • Frame Stiffness: 10⁸ N/m or higher • Contact Force Hold Time: Unlimited • Maximum indentation Depth: 1000 μm or higher • Indentation Depth Noise Floor: 1.5 nm or better • Normal Depth Bit Resolution: 0.03 nm or better • Maximum Indenter Travel Range: 1000 μm or higher <p>c. Depth Range:</p> <ol style="list-style-type: none"> i. Maximum indentation Depth: 1000 μm or higher ii. Indentation Depth Noise Floor: 1.5 nm or better iii. Normal Depth Bit Resolution: 0.03 nm or better iv. Maximum Indenter Travel Range: 1000 μm or higher <p>d. Fully automated XY&Z motion Stage Specifications:</p> <ol style="list-style-type: none"> i. XY Travel: 120 mm x 70 mm or higher ii. XY Stage Resolution: 35 nm or better iii. Z Travel: minimum 30 mm or higher iv. Z Stage Resolution: 10 nm or lower <p>e. Optical imaging:</p>
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		<ul style="list-style-type: none"> i. High Quality video camera with c-mount (min1280 x 1024 Pixels) square CMOS pixel sensor and 60 fps or better. ii. Integrated Microscope iii. Turret with minimum 4 slots for objectives on the optical microscope iv. Objectives: (Infinity corrected Pan APO) Standard-5X (Optical Magnification x50), 20X (Optical Magnification x200) 100X (Optical Magnification x1000) f. Post-scan and pre-scan modes for topography scanning should be available. The control software should have necessary options to obtain and to plot variation in Lateral force, Co-efficient of friction with respect to scratch length during scratch testing. g. Acoustic emission measurement during scratch testing is required scratch events brittle materials h. System should have provision to measure the lateral forces and coefficient of friction i. Fast feedback load control during scratch/scanning j. Micro Indentation System should be based on load - Displacement type of measurement capability for automatic / semi-automatic determination of Hardness & Elastic modulus. k. Machine also should cover the maximum force range upto 20N for indentation. l. It should have a mechanical referencing system on the indentation module for taking a constant reference from the sample surface m. Universal Sample Holder can accommodate various sizes and height samples n. Standard tool kit for regular operation maintenance of the equipment
	Diamond Indenters	<p>Calibrated Vickers Indenter (Cone Angle 136°) - Qty 2 Nos.</p> <p>Knoop-Qty 1 No</p> <p>Cube Corner-Qty 2 Nos</p> <p>Rockwell indenter-Qty 10 Nos (25 μm- 1 no, 50 μm -3 no, 100 μm – 3 no. and 200μm – 3 no.)</p> <p>Bekovich Indenters -Qty 4nos</p>

	Standard Samples	Fused Silica-Qty 5 Nos Steel Ref.-Qty 2 Nos Tungsten Ref.- Qty 1 Nos
7	Friction sensor	<p>Range (suitable for all test modules): 5-500mN, Resolution 100μN or better; 0.5 – 50N, Resolution 5mN or better; 20-2000N, Resolution 200 mN or better</p> <p>It should be suitable for all above mentioned modules and should work as per tender requirement</p> <p>All force sensor may be either 2D force sensors or independent sensors to detect both normal and lateral force</p> <p>Quick changeover of force sensors assembly should be ensured</p> <p>All load sensors should be calibrated for the entire range and calibration certificate should be provided</p>
8	Environment Chamber (as optional)	<p>Temperature: RT to 1000deg C</p> <p>Atmosphere: Inert with 10⁻³ bar and vacuum with 10⁻⁵ bar</p> <p>Humidity control</p>
9	3D Optical Profilometer (as optional)	Suitable 3D optical profilometer for inline measurements with atleast 10X magnification
8	Tribo-corrosion	Corrosion Chamber and Special Holder with Probes

9	Ball and Pin holders	Approx pin sizes 2mm, 4mm, 6mm, 8mm, and 10mm
		Approx ball sizes 4mm, 6mm, 8mm, and 10mm
		Flat specimen self-leveling holder must be provided for thrust
		Suitable holder to hold customized specimens such as piston rings-cylinder bores
		1 no of Each holder should be supplied
		Holders suitable for different temperature ranges can be quoted as optional
10	Balls	For each requested ball holder following quantity of balls are required
		Tungsten carbide -10 nos
		Sapphire - 10 nos
		52100 steel hardened and tempered - 50 Nos
		D2 tool steel - 25 nos
11	Essential Accessories	Acoustic emission measurement sensor
		Water cooling system (If required)
		Necessary tool kit and Dead weights
		Necessary samples kit for calibration
		Thermocouples
		Required vacuum gauges (if required)
		Contact resistance measurement probe (optional)
		Required gas regulators (If Required)
12	Spares	Necessary spares and accessories for 3 years of seamless operation
13	Software	Fully automated computerized control, data acquisition and processing system should be provided
		The software should be user friendly and should be capable of performing experiments, calibrations, measurements, and analysis which includes continuous real time data acquisition of frictional signal during test, complete data analysis including friction, wear, normal load etc.
		Calculation of Hertzian pressure, contact radius and contact area are desirable
		Periodic update of the software for ten year should be included
		The software should be user friendly and have features such as defined report generation, data and figures import / export to spread sheets such as ASCII, word, excel, pdf etc. Provision for off-line data processing should be there

14	Computer and printer	<p>A suitable computer with HP/DELL make for data acquisition and analysis with following specifications or better Processor: I7 8th Generation or better; RAM: 8GB or more; Hard drive: 1TB or more; Graphics card: Suitable graphics cards for software; Suitable function ports, USB ports, DVD combo drive, windows 10 etc.</p> <p>Monitor: HD ULTRAWIDE DISPLAY (34inch, 3440X1440) 21:9 Ultra Sharp Monitor, Full Resolution Panorama display</p> <p>Printer: A laser jet / Ink tank color printer of good brand such as HP/EPSON</p>
15	Manual	Two sets of operation and maintenance manuals (both soft copy and hard copy)
		Installation manual with all the pre-installation requirements should be provided within 2 weeks of receiving Purchase order
16	Pre-dispatch Inspection	Pre-dispatch inspection will be done at supplier's site. Before dispatch all the features will be checked and each test on defined samples will be carried out at minimum and maximum operating conditions
17	Training	Onsite training (operation and maintenance) for both software and hardware
18	Warranty/Guaranty:	a. The complete system must be guaranteed for free repair/ replacement for a period of 03 (three) years from the date of Final Acceptance Certificate
		b. Extended warranty for 1 year after guarantee period should be quoted as OPTIONAL in technical bid (Cover 2)
		c. In case of breakdown during Guarantee/warranty period, a competent service engineer of the supplier should make as many visits as are required to rectify the problem and replace the faulty parts, without any liability of cost

The Supplier should provide support documents to show their Customers' list and should have supplied (should be in operation till date) at least **5 systems** of similar specifications in the **last 3 years**.

The Supplier should comply with all Safety features and incorporate all safety for controls and operator while in operation from possible damages and injury. Automatic machine shutoff/warnings in the event of malfunctioning beyond pre-set limits. The equipment should be designed in such a way that in the event of power failure or emergency shutoff, the absolute position or condition of the system shall be retained and the system should resume the test.

Acceptance Criteria

1. Demonstration of the performance of the system as per the specifications given in the technical specifications.
2. Test will be carried out at 5 different operating conditions using the module supplied. The test conditions will be decided by ARCI during installation
3. Submission of detailed technical, maintenance and operating manual.
4. Necessary calibration of the various parameters needs to be done at the site of installation and training has to be imparted on the procedure to be adopted for calibration to at least two personnel from ARCI.
5. The supplier will train ARCI scientists on site for 5 working days on the use of equipment and data analysis software packages supplied as part of the unit.

Supply of the materials, demonstration, installation and services must be done at:

International Advanced Research Centre for Powder Metallurgy and New Materials, Balapur Post, Hyderabad – 500 005, Telangana, India

TECHNICAL COMPLIANCE STATEMENT

PROCUREMENT, INSTALLATION AND COMMISSIONING OF HIGH TEMPERATURE UNIVERSAL TRIBOMETER WITH MICRO SCRATCH TESTING FACILITY

	Specifications	Technically compliance as per specification given (Yes/No)	Remarks (if any)
1.	Rotary drive:		
	(a) Rotary Drive Module with Specimen Table (for ball on disk/plate test, Pin on disc and disk on disk/flat on flat test, 4 ball wear test) (b) Automatic servo loading with load range: 1-2000N or better (c) speed: 0.1 to 2,000 rpm (d) Friction force: 0.1N or better upto 1400N or better (e) System should be capable of performing test at both dry and lubricating conditions. (f) High Speed Anti-Splash Liquid Container for Rotary drive (g) High temperature chamber with temperature controller range from Ambient to 1000°C in dry condition and upto 400°C in lubricated condition (h) Shall be able to perform ASTM G99, ASTM G132 and ASTM D3702 or equivalent (i) Suitable indenter and holders for entire temperature range should be supplied.		
2.	Linear Drives:		
	(a) Max travel distance: 120mm or more (b) Speed: 0.01 to 10mm/sec or more (c) Lateral force: upto 400N or better (d) Suitable tool and holders should be provided		
3.	Linear - Reciprocating Drive		
	Reciprocating drive (for ball on flat, pin on plate, rolling-sliding) Speed: 0.1-60Hz or better		

	<p>Automatic servo loading with load range: 1-2000N or better</p> <p>Operating condition: both dry and lubricated</p> <p>Stroke: 1-25mm or better at applicable frequency ranges. Speed for 25mm stroke length should not be less than 20Hz</p> <p>Anti-Splash Liquid Container to perform reciprocating test under lubricated conditions</p> <p>High temperature chamber with temperature range from Ambient to 400°C with Temperature controller</p> <p>Shall be able to perform ASTM G199, ASTM G203, ASTM D204, ASTM G206 or equivalent</p> <p>Suitable indenter and holders for entire temperature range should be supplied; to hold customized specimens such as piston rings-cylinder bores</p>		
4	Piston Ring Cylinder Liner test module (ASTM G181)		
	<ul style="list-style-type: none"> ● Oil Recirculation ● 40mm at 50Hz (long stroke, fast frequency) ● Install test coupons cut from real components ● Piezo Sensors ● Inline Friction, Down force, Wear 		
5.	High Temperature Hardness		
	<p>High temperature hardness tester to do high temperature materials testing at ambient temperature up to 1000°C.</p> <p>To prevent oxidation of tip and the samples the high temperature indenter should be in a sealed Chamber with inert gas.</p> <p>Automatic servo loading with load range: upto 2000N or better</p> <p>Suitable indenter and holders for entire temperature range should be supplied.</p>		
6.	Micro Scratch test		
	<p>a. Detailed Specifications:</p> <ul style="list-style-type: none"> ● Lateral force: 20 N or better ● Lateral force bit resolution: 10µN or better ● Max scratch length: 50mm or more ● Scratch speed: 0.5 to 500 mm/min 		

	<ul style="list-style-type: none"> • Maximum contact force for scanning: upto 10 mN <p>b. Normal Loading:</p> <ul style="list-style-type: none"> • Normal Force Range: 10mN to 20N/higher • Maximum Force: 20N or higher • Minimum Contact Force: 10 mN or less • Loading Rate: 100 mN/min or higher • Normal Load Noise Floor: 250 μN or lower • Normal Force Bit Resolution: 6 μN or lower • Frame Stiffness: 10^8 N/m or higher • Contact Force Hold Time: Unlimited • Maximum indentation Depth: 1000 μm or higher • Indentation Depth Noise Floor: 1.5 nm or better • Normal Depth Bit Resolution: 0.03 nm or better • Maximum Indenter Travel Range: 1000 μm or higher <p>c. Depth Range:</p> <ul style="list-style-type: none"> • Maximum indentation Depth: 1000 μm or higher • Indentation Depth Noise Floor: 1.5 nm or better • Normal Depth Bit Resolution: 0.03 nm or better • Maximum Indenter Travel Range: 1000 μm or higher <p>d. Fully automated XY&Z motion Stage Specifications:</p> <ul style="list-style-type: none"> • XY Travel: 120 mm x 70 mm or higher • XY Stage Resolution: 35 nm or better • Z Travel: minimum 30 mm or higher • Z Stage Resolution: 10 nm or lower <p>e. Optical imaging:</p> <ul style="list-style-type: none"> • High Quality video camera with c-mount (min1280 x 1024 Pixels) square CMOS pixel sensor and 60 fps or better. • Integrated Microscope • Turret with minimum 4 slots for objectives on the optical microscope 		
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	<ul style="list-style-type: none"> • Objectives: (Infinity corrected Pan APO) Standard-5X (Optical Magnification x50), 20X (Optical Magnification x200) 100X (Optical Magnification x1000) <p>f. Post-scan and pre-scan modes for topography scanning should be available. The control software should have necessary options to obtain and to plot variation in Lateral force, Coefficient of friction with respect to scratch length during scratch testing.</p> <p>g. Acoustic emission measurement during scratch testing is required scratch events brittle materials</p> <p>h. System should have provision to measure the lateral forces and coefficient of friction</p> <p>i. Fast feedback load control during scratch/scanning</p> <p>j. Micro Indentation System should be based on load - Displacement type of measurement capability for automatic / semi-automatic determination of Hardness & Elastic modulus.</p> <p>k. Machine also should cover the maximum force range upto 20N for indentation.</p> <p>l. It should have a mechanical referencing system on the indentation module for taking a constant reference from the sample surface</p> <p>m. Universal Sample Holder can accommodate various sizes and height samples</p> <p>n. Standard tool kit for regular operation maintenance of the equipment</p>		
7.	Diamond Indenters		
	<p>Calibrated Vickers Indenter (Cone Angle 136°) - Qty 2 Nos.</p> <p>Knoop-Qty 1 No</p> <p>Cube Corner-Qty 2 Nos</p> <p>Rockwell indenter-Qty 10 Nos (25 μm- 1 no, 50 μm -3 no, 100 μm – 3 no. and 200μm – 3 no.)</p> <p>Bekovich Indenters -Qty 4nos</p>		

	<p>Standard Samples:</p> <p>Fused Silica-Qty 5 Nos</p> <p>Steel Ref.-Qty 2 Nos</p> <p>Tungsten Ref.- Qty 1 Nos</p>		
8.	Friction sensor		
	<p>Range (suitable for all test modules): 5-500mN, Resolution 100μN or better; 0.5 – 50N, Resolution 5mN or better; 20-2000N, Resolution 200 mN or better</p> <p>It should be suitable for all above mentioned modules and should work as per tender requirement</p> <p>All force sensor may be either 2D force sensors or independent sensors to detect both normal and lateral force</p> <p>Quick changeover of force sensors assembly should be ensured</p> <p>All load sensors should be calibrated for the entire range and calibration certificate should be provided</p>		
9.	Environment Chamber (as optional)		
	Temperature: RT to 1000deg C		
	Atmosphere: Inert with 10 ⁻³ bar and vacuum with 10 ⁻⁵ bar		
	Humidity control		
10.	3D Optical Profilometer (as optional)		
	Suitable 3D optical profilometer for inline measurements with atleast 10X magnification		
11.	Tribo-corrosion		
	Corrosion Chamber and Special Holder with Probes		
12.	Ball and Pin holders		
	Approx pin sizes 2mm, 4mm, 6mm, 8mm, and 10mm		
	Approx ball sizes 4mm, 6mm, 8mm, and 10mm		
	Flat specimen self-leveling holder must be provided for thrust		

	Suitable holder to hold customized specimens such as piston rings-cylinder bores		
	1 no of Each holder should be supplied		
	Holders suitable for different temperature ranges can be quoted as optional		
13.	Essential Accessories		
	Acoustic emission measurement sensor		
	Water cooling system (If required)		
	Necessary tool kit and Dead weights		
	Necessary samples kit for calibration		
	Thermocouples		
	Required vacuum gauges (if required)		
	Contact resistance measurement probe (optional)		
	Required gas regulators (If Required)		
14.	Computer and printer		
	A suitable computer with HP/DELL make for data acquisition and analysis with following specifications or better Processor: I7 8th Generation or better; RAM: 8GB or more; Hard drive: 1TB or more; Graphics card: Suitable graphics cards for software; Suitable function ports, USB ports, DVD combo drive, windows 10 etc. Monitor: HD ULTRAWIDE DISPLAY (34inch, 3440X1440) 21:9 Ultra Sharp Monitor, Full Resolution Panorama display Printer: A laser jet / Ink tank		
15	Spares		
	Necessary spares and accessories for 3 years of seamless operation		
16.	Software		
	Fully automated computerized control, data acquisition and processing system should be provided The software should be user friendly and should be capable of performing experiments, calibrations, measurements, and analysis which includes continuous real time data acquisition of		

	<p>frictional signal during test, complete data analysis including friction, wear, normal load etc. Calculation of Hertzian pressure, contact radius and contact area are desirable</p> <p>Periodic update of the software for ten year should be included</p> <p>The software should be user friendly and have features such as defined report generation, data and figures import / export to spread sheets such as ASCII, word, excel, pdf etc. Provision for off-line data processing should be there</p>		
17.	Manual		
	<p>Two sets of operation and maintenance manuals (both soft copy and hard copy)</p> <p>Installation manual with all the pre-installation requirements should be provided within 2 weeks of receiving Purchase order</p>		
18.	Pre-dispatch Inspection		
	<p>Pre-dispatch inspection will be done at supplier's site. Before dispatch all the features will be checked and each test on defined samples will be carried out at minimum and maximum operating conditions</p>		
19.	Training		
	<p>Onsite training (operation and maintenance) for both software and hardware</p>		
20.	Warranty/Guaranty:		
	<p>a. The complete system must be guaranteed for free repair/ replacement for a period of 03 (three) years from the date of Final Acceptance Certificate</p> <p>b. Extended warranty for 1 year after guarantee period should be quoted as OPTIONAL in technical bid (Cover 2)</p> <p>c In case of breakdown during Guarantee/warranty period, a competent service engineer of the supplier should make as many visits as are required to rectify the problem and replace the faulty parts, without any liability of cost</p>		

Suppliers are required to provide this Technical Compliance Statement while submitting the Technical Bid (Cover 2).

INTEGRITY PACT

Between
International Advanced Research Centre for Powder Metallurgy and New Materials hereinafter
referred to as “ARCI”.

And
.....herein referred to as “The Bidder/ Contractor.”

Preamble

The ARCI intends to award, under laid down organizational procedures, contract/s for
..... The ARCI values full compliance with all relevant laws of
the land, rules, regulations, economic use of resources and of fairness/ transparency in its relations
with its Bidder(s) and/or Contractor(s).

In order to achieve these goals, the ARCI will appoint an Independent External Monitor (IEM), who
will monitor the tender process and the execution of the contract for compliance with the principles
mentioned above

Section 1 – Commitments of the ARCI

- (1) The ARCI commits itself to take all measures necessary to prevent corruption and to observe
the following principles:
 - a. No employee of the ARCI, personally or through family members, will in connection
with the tender for, or the execution of a contract, demand, take a promise for or accept,
for self or third person, any material or immaterial benefit which the person is not
legally entitled to.
 - b. The ARCI will, during the tender process treat all Bidder(s) with equity and reason.
The Principal will in particular, before and during the tender process, provide to all
Bidder(s) the same information and will not provide to any Bidder(s)
confidential/additional information through which the Bidder(s) could obtain an
advantage in relation to the tender process or the contract execution.
 - c. The ARCI will exclude from the process all known prejudiced persons.

- (2) If the ARCI obtains information on the conduct of any of its employees which is a criminal
offence under the IPC/PC Act, or if there be a substantive suspicion in this regard, the
Principal will inform the Chief Vigilance Officer and in addition can initiate disciplinary
action.

Section 2 – Commitments of the Bidder(s)/Contractor(s)

- (1) The Bidder(s)/Contractor(s) commit himself to take all measures necessary to prevent
corruption. He commits himself to observe the following principles during his participation
in the tender process and during the contract execution.

- a. The Bidder(s)/Contractor(s) will not, directly or through any other Person or firm, offer, promise or give to any of the ARCI's employees involved in the tender process or the execution of the contract or to any third person any material or other benefit which he/she is not legally entitled to, in order to obtain in exchange any advantage of any kind whatsoever during the tender process or during the execution of the contract.
 - b. The Bidder(s)/Contractor(s) will not enter with other Bidders into any Undisclosed agreement or understanding, whether formal or informal. This applies in particular to prices, specifications, Certifications, subsidiary contracts, submission or non-submission of bids or any other actions to restrict competitiveness or to introduce cartelization in the bidding process.
 - c. The Bidder(s)/Contractor(s) will not commit any offence under the relevant IPC/PC Act; further the Bidder(s)/Contractor(s) will not use improperly, for purposes of competition or personal gain, or pass on to others, any information or document provided by the ARCI as part of the business relationship, regarding plans, technical proposals and business details, including information contained or transmitted electronically.
 - d. The Bidder(s)/Contractor(s) of foreign origin shall disclose the name and address of the Agents/representatives in India, if any. Similarly, the Bidder(s)/Contractor(s) of Indian Nationality shall furnish the name and address of the foreign principals, if any.
 - e. The Bidder(s)/Contractor(s) will, when presenting his bid, disclose any and all payments he has made, is committed to or intends to make to agents, brokers or any other intermediaries in connection with the award of the contract.
- (2) The Bidder(s)/Contractor(s) will not instigate third persons to commit offences outlined above or be an accessory to such offences.

Section 3 – Disqualification from tender process and exclusion from future Contracts

If the Bidder(s)/Contractor(s), before award or during execution has committed a transgression through a violation of Section 2, above or in any other form such as to put his reliability or credibility in question, the ARCI is entitled to disqualify the Bidder(s)/Contractor(s) from the tender process or take action as per the procedure.

Section 4 – Compensation for Damages

- (1) If the ARCI has disqualified the Bidder(s) from the tender process prior to the award, the ARCI is entitled to demand and recover the damages equivalent to Earnest Money Deposit.

Section 5 – Equal treatment of all Bidders / Contractors/ Subcontractors

- (1) The Bidder(s)/Contractor(s) undertake(s) to demand from all Subcontractors a commitment in conformity with this Integrity Pact, and to submit it to the ARCI before contract signing.
- (2) The ARCI will enter into agreements with identical conditions as this one with all Bidders, Contractors and Subcontractors.
- (3) The ARCI will disqualify from the tender process all bidders who do not sign this Pact or violate its provisions.

Section 6 – Other provisions

- (1) This agreement is subject to Indian Law. Place of performance and Jurisdiction is the Registered Office of the ARCI i.e. Hyderabad.
- (2) Changes and supplements as well as termination notices need to be made in writing. Side agreements have not been made.
- (3) If the Contractor is a partnership or a consortium, this agreement must be signed by all partners or consortium members.
- (4) Should one or several provisions of this agreement turn out to be invalid, the remainder of this agreement remains valid. In this case, the parties will strive to come to an agreement to their original intentions.

(For & On behalf of the ARCI)
(Office Seal)
Place.....
Date.....

(For & On behalf of Bidder/Contractor)
(Office Seal)
Place.....
Date.....

Witness 1:
(Name & Address): _____

Witness 2:
(Name & Address): _____

CHECK LIST

BIDDER HAS TO FILL IN THE CHECK LIST GIVEN BELOW

**(Following documents are to be submitted online and manual as part of Technical Bid.
Bidders are requested to state Yes / No against each column)**

Sl. No.	Description	Online Submission	Manual Submission
1.	If bidder is not an original equipment manufacturer, authorization letter attached.		
2.	Whether Earnest Money Deposit (EMD) Submitted		
3.	Whether Technical Bid Submitted		
4.	Integrity Pact		
5.	Whether Rate for Optional items are quoted in Technical Bid (Cover 2)		
6.	Whether Commercial Bid Submitted (Cover 3)		No offline submission. Only ONLINE submission.
7.	PAN / GSTIN Number from concerned authorities		
8.	Details of Products and Components		
9.	Whether declaration form signed and Submitted (Scanned Copy by online and original by manual)		
10.	Whether warranty clause mentioned		
11.	This Checklist (Scanned Copy by online and original by manual)		
12.	Whether all pages of tender document signed and uploaded		

NOTE: Please ensure all the relevant boxes are marked YES/NO against each column.

IMPORTANT NOTE: Tenderers must ensure that all the required documents indicated in the Tender documents are submitted without fail. Tenders received without supporting documents for the various requirements mentioned in the tender document are liable to be rejected at the initial stage itself.
