



CSIR-CENTRAL SCIENTIFIC INSTRUMENTS ORGANISATION

(Council of Scientific & Industrial Research)

Sector 30-C, Chandigarh-160 030 India

Telephone/FAX: 91-172-2652651

Email: cosp@csio.res.in

Website: <https://www.csio.res.in>

Open/Global E-Publish Tender Notice

Director, CSIO, invites E-Publish tenders in closed/sealed covers with wax/cello tape/ company seal from the reputed Indian/foreign manufacturers or sole authorized dealers/distributors for the supply of the following item(s):

S. No.	Tender No.	Description of material	EMD (Indian Rupees)	Type of Bid	Date & time for submission of tenders	Date & time for opening of tenders
1.	CSIO/3(1)/2019-Pur	Vacuum Sputtering Coating System	1.40 lakhs	Two bid Systems (Technical & Commercial)	3 rd October, 2019 upto 3.00 P.M.	3 rd October, 2019 at 3.30 P.M.
2.	CSIO/3(2)/2019-Pur	High Speed Camera	1.96 lakhs	-do-	3 rd October, 2019 upto 3.00 P.M	3 rd October, 2019, at 3.30 P.M
3.	CSIO/3(12)/2019-Pur	Portable CMM	Nil	Expression of Interest	17 th September at 11.00 A.M in PGRP Block, CSIO, Chandigarh	
4.	CSIO/3(17)/2019-Pur	Automated Analytical Cum Semi Preparative High Performance Liquid Chromatography (HPLC) system	50,000/-	Two bid Systems (Technical & Commercial)	3 rd October, 2019 upto 3.00 P.M	3 rd October, 2019, at 3.30 P.

Complete details are available in the Tender Notice, which can be downloaded from www.eprocure.gov.in and our website “<https://csio.res.in>” Free of cost. The tender has also been e-published.

(Mohinder Kumar)
Controller of Stores & Purchase



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Open Tender Notice

TENDER DOCUMENT FOR OPEN TENDER

(TERMS & CONDITIONS INCLUDING INSTRUCTION TO BIDDERS AND CONDITIONS OF CONTRACT)

- 1. GENERAL:** Quotations in closed cover are invited on behalf of the Director, Central Scientific Instruments Organisation from the reputed Indian and foreign manufacturer. **The offer/ quotation must be strictly as per required specifications and the tender terms & conditions.**
2. The purchase shall be in accordance with the provision of our **CSIR Manual on procurement of Good 2019 & GFR.**
3. Director, CSIO reserves the right to accept or reject all or in parts, the items mentioned in the specification depending without assigning any reason.

ELIGIBILITY CRITERIA: *The Bidders should comply fully with the Technical Specifications in the tender documents.*

2. PREPARATION AND SUBMISSION OF OFFERS:

- a) Quotation should be submitted directly by the original manufacturer/supplier or its sole authorized distributor/dealer in **Hard Copy only (Electronic offer will not be acceptable)**. In case of bid by authorized dealer/distributor (the Principal should authorize only one firm against a particular tender) and the manufacturer authorization should be attached with the technical bid as per **Annexure-'F'**.
- b) In case a bidder is not doing business within India, it shall furnish the certificate to the effect that the bidder is or will be represented by an agent in India equipped and able to carry out the supply, maintenance, repair obligations etc. during the warranty and post-warranty period or ensure a mechanism at place for carrying out the supply, maintenance, repair obligations etc. during the warranty and post-warranty period.
- c) The bidder shall bear all costs associated with the preparation and submission of its bid irrespective of the conduct or outcome of the bidding process.
- d) The bidder should not indulge in any corrupt, fraudulent, collusive, coercive practices during the entire process of procurement and execution of contract/order.
- e) Before the deadline for submission of the bid, CSIO reserves the right to modify the bidding document and to extend or not to extend the date of submission. Such amendment/modification will be notified to bidders receiving the bidding document in writing or by cable/fax/ email and will also be hosted on CSIO website.
- f) Conditional tenders will be summarily rejected.
- g) A bidder may withdraw, substitute, or modify its bid after it has been submitted by sending a written notice signed by the authorized signatory before the date of submission of the bid. Any re-submission or modification in the bid should be submitted before the date & time of submission of bid as originally conveyed in the invitation of bid.
- h) The bidders are not permitted to withdraw/alter or modify their bids after expiry of the deadline of receipt of bids.
- i) First envelope marked "WITHDRAWAL" shall not be opened, but returned to the Bidder subject to submission of valid authorization to request the withdrawal. In case of substituted and modified bid, only the substituted bids and modified bids will be opened subject to production of authorization from the bidders.
- j) The quotation should be addressed to the Director, Central Scientific Instruments Organisation, Chandigarh and sent to the Stores & Purchase Officer.
- k) Each offer/quotation should be kept in separate envelope against each item of the tender notice.
- l) For items covered under Two-Bid -Tender System, quotation/offer should be submitted in two separate envelopes containing Techno-Commercial bid and Price bid and these put in one envelope.

m) **The outer cover containing the offer/quote should be super-scribed with our Tender No. (Not the Open/Global/ Tender Notice No.), Due date and Date of opening of tender.**

n) **The offers must contain** the following documents :-

(A) Techno-commercial offers must contain:

- i.** Manufacturer authorization (as per clause 2(a)) as per **Annexure –‘F’**.
- ii.** Certificate by bidder not doing business in India as per clause 2(b).
- iii.** Technical literature/ leaflets and complete specifications of quoted model(s) along with commercial terms and conditions.
- iv.** Compliance statement/questionnaire of tender terms and conditions as per **Annexure-‘A’**
- v.** Compliance statement of specifications as per **Annexure- ‘B’**
- vi.** Bid Security/EMD (as per clause -4) as per **Annexure- ‘C’**
- vii.** In case of exemption from submission of Bid security, proof of registration with DGS&D/NSIC as per clause (4(a)).
- viii.** Copies of previous supply orders (as per clause 9(c) and clause 24) as per **Annexure –‘G’**.
- ix.** Details of supplies of similar equipments as per clause 9(d).

(B) Price Bid offers must contain: (Only in case of two bid system)

- i.** Bid price as per clause 5 in format enclosed as **Annexure- ‘D’** or **Annexure- ‘E’** as applicable.
- ii.** Certificate of price reasonability as per clause 9(b).

3. **DUE & OPENING DATES:** The Offer/Quotations must **reach** at CSIO as per Tender Notice. The tenders will be **opened** in the presence of bidders, who wish to present themselves at the time of opening of tender. In case opening date happens to be a holiday, the tender will be opened on next working day at the same time & location. The price bids of two bid tender system shall be opened after technical evaluation of technical bids. The date of opening of price bids shall be informed to the bidders found suitable in technical evaluation. No request for extension in the date of submission & opening of tender will be entertained. However CSIO, may at its discretion, extend the deadline for submission of bids under intimation to bidders.

4. **EARNEST MONEY DEPOSIT (EMD):**

- a.** EMD in the form of Bank guarantee (**As per format enclosed as ANNEXURE- ‘C’**) or Term Deposit Receipt/FDR or Bank Draft of a scheduled bank pledged in the name of Director, Central Scientific Instruments Organisation, Chandigarh **valid for 45 days beyond the validity of tender** for the required amount as mentioned in the tender notice separate for each item must be submitted along with the quotation (with the techno-commercial quotation in case of two-bid system and photocopy of the same enclosed with the price bid **and for foreign manufacturers they should furnish the EMD in foreign currency equivalent to Indian rupees**, otherwise quotation may not be considered. **The bid security should be submitted in its original form, copies shall not be accepted. The firm registered with DGS&D/NSIC/MSME as manufacturer for the supply of the same category of item for which the party is submitting quotation will be exempted from submission of EMD.** Intended parties will have to give proof of registration along with their quotation. EMD of the unsuccessful bidders shall be refunded without any interest at the earliest after finalization of the purchase of concerned item. The party must therefore, submit a pre-receipted Bill in triplicate along with the quotation (in case of EMD sent in form of Bank Draft) to enable us to refund their EMD.
- b.** The bid security /EMD may be forfeited if a bidder withdraws or amends or impairs or derogates its bid during the period of bid validity.

5. **PRICES**

Bid prices should be filled in the appropriate format enclosed **as Annexure ‘D’ and ‘E’**.

A. For goods manufactured in India:

- (i)** The price of goods quoted Ex-Works including taxes already paid.
- (ii)** GST and other taxes etc. which will be payable on the goods if the contract is awarded.
 - (a)** The charges for inland transportation, insurance and other local service required for delivering the goods at the desired destination as specified in the price schedule form.
 - (b)** The installation, commissioning and training charges including any incidental services, if any.

B. For goods manufactured abroad:

- (i) The price of the goods, quoted on FCA (Named place of delivery abroad) or FOB (Named port of shipment), as specified in the schedule form.
- (ii) The charges for insurance and transportation of the goods to the port/place of destination.
- (iii) The agency commission charges, if any.
- (iv) The installation, commissioning and training charges including any incidental services, if any.
- (v) **Please send your Quotation with full specifications alongwith literatures. The quotation/offer value should be on FOB/FCA including inland Freight value. Cost of packing, forwarding. Air freight Transportation & Insurance charges may please be mentioned separately invariably. The rates/value of freight & insurance should be mandatory mentioned failing which the tender will be rejected. The gross weight of the consignment may be intimated in the Proforma Invoice to decide the mode of dispatch.**

C. CSIR-CSIO is a R&D Govt. Organisation & the requirement is for R&D purpose. CSIR-CSIO is exempted from IGST and Custom Duty under Govt. Notification No. 51/96-Custom dated 23.07.1996 and & No. 43/2007-Customs dated 30.06.2017 and Govt. Notification No. 45/2017-Central Tax (rate) & No. 45/2017-Integrated Tax (rate) dated 14.11.2017. Only basic duty is applicable under this notification, hence bidders will have to submit their offer accordingly. We are exempted from payment of Customs Duty under notification No.51/96 dated 23.07.1996. Hence IGST and Customs Duty, if any, should be shown separately. No other charges than those mentioned clearly in the quotation will be paid.

D. GSTIN: 04AAATC2716R1ZN

6. VALIDITY OF OFFER :

The prices must be valid at least for a period of **90 days** from the date of opening of Price bid. No changes in prices will be acceptable in any condition after opening of tender till the validity of the offer or execution of the order whichever is later.

7. EVALUATION OF BIDS: Before submission of bid, the bidder is expected to examine all the instructions, forms, terms and specifications in the bidding document and should ensure that the following conditions are fulfilled, failing which the bid may be declared as unresponsive & to be ignored.

- a) The Bid is unsigned.
- b) The bidder is not eligible
- c) The Bid validity is shorter than the required period
- d) The bidder has quoted for goods manufactured by a different firm without the required authority letter from the proposed manufacturer.
- e) Bidder has not agreed to give the required performance security
- f) The goods quoted are sub-standard, not meeting the required specifications etc.
- g) Against the schedule of Requirement (incorporated in the tender enquiry), the tenderer has not quoted for the requirement as specified in the schedule.
- h) The tenderer has not agreed to some essential condition(s) incorporated in the tender enquiry.
- i) Bidder Information form as per **Annexure-‘H’**.
- a) In case the bid is substantially responsive, the purchase may request that bidder may submit the necessary information, documentations, within a reasonable period of time, to rectify, non-material, non-conformities or omission in the bid related to documentation requirements. Failure of the bidders to comply with the request may result in the rejection of its bids. But in case of the material deviation/reservation or omission which limits or is inconsistent with the bidding documents and the Purchaser’s Rights or Bidders obligation under the contract or which if rectified, would unfairly affect the other bidders, the bid will be rejected.
- b) The Purchaser shall correct arithmetical errors on the following basis:
 - (i) If there is a discrepancy between the unit price and the line item total that is obtained by multiplying the unit price by the quantity, the unit price shall prevail and the line item total shall be corrected, unless in the opinion of the Purchaser there is an obvious misplacement of the decimal point in the unit price, in which case the line item total as quoted shall govern and the unit price shall be corrected.
 - (ii) If there is an error in a total corresponding to the addition or subtraction of subtotals, the subtotals shall prevail and the total shall be corrected; and
 - (iii) If there is a discrepancy between words & figures, the amount in words shall prevail, unless the amount expressed in words is related to an arithmetic error, in which case the amount in figures shall prevail subject to (i) and (ii) above.
- c) Selling exchange rate/equivalent to Indian currency will be as on the date of bid opening in the case of single bidding and the rate on the date of opening of the priced bids in the case of two-part bidding.
- d) The bids shall be evaluated on the basis of final landing cost as per **Annexure –‘D’** in case of import and **Annexure –‘E’** in case of indigenous items.
- e) The comparison between the indigenous and the foreign offers shall be made on FOR destination basis and CIF/CIP basis respectively. However the CIF/CIP prices quoted by any foreign bidders shall be loaded further as under :
 - (a) Towards customs duty and other statutory levies-as per applicable rates.
 - (b) Towards custom clearance, inland transportation etc. – 2% of the CIF/CIP value.
- f) Where the price quoted on FOB/FCA and CIF/CIP basis are the same, the Contract would be made on CIF/CIP basis only.

- g) The Purchaser reserves the right at the time of Contract award to increase or decrease the quantity of goods and services originally specified in the tender document without any change in unit price or other terms and conditions. Further, at the discretion of the purchaser, the quantities in the contract may be enhanced by 30% within the delivery period.
8. The Vague terms like “packing, forwarding, transportation..... etc. extra” without mentioning the specific amount/percentage of these charges will not be accepted. Such offers shall be treated as incomplete and rejected.

9. REASONABILITY OF PRICES :

- a) Please quote best minimum prices applicable for a premiere Research Institution, **leaving no scope for any further negotiations on prices.**
- b) **The quoting party should give a certificate to the effect that** the quoted prices are the minimum and they have not quoted the same item on lesser rates than those being offered to CSIO to any other customer nor they will do so till the validity of offer or execution of the purchase order, whichever is later.
- c) Copies of **at least last two recently supplied orders of the last 2 years** received from other customers along with details of such supply orders preferably in India for the same item/model **may be submitted with the offer** giving reasons of price difference of their supply order & those quoted to us, if any. (As per **Annexure –‘G’**).
- d) The party must give details of identical or similar equipment, if any, supplied to any CSIR lab during last three years along with the final price paid and Performance certificate from them.

- 10. ANNUAL MAINTENANCE CHARGES:** The party must mention/quote separately in the quotation, the rate/amount of annual maintenance charges, if we opt for maintenance contract after expiry of the warranty period.

11. SPECIFICATIONS:

- A. Specifications are basic essence of the product. It must be ensured that the offers must be strictly as per our specifications. At the same time it must be kept in mind that merely copying our specifications in the quotation shall not make the parties eligible for consideration of the quotation. The offer/quote received with specifications copied/paste should be rejected. As such avoid copied pasting. **A quotation has to be supported with the printed technical leaflet/literature of the quoted model of the item by the quoting party/manufacturer** and the specifications mentioned in the quotation must be reflected/supported by the printed technical leaflet/literature. Therefore the model quoted invariably be highlighted in the leaflet/literature enclosed with the quotation. Non-compliance of the above shall be treated as incomplete/ambiguous and the offer can be ignored without giving an opportunity for clarification/negotiation etc. to the quoting party
- B. **The technical bid shall be evaluated for acceptability by the technical committee and may call the tenderers for discussion. If necessary, the committee may modify the technical specification to suit the CSIO requirement. In such case the opportunity shall be given to the participating bidders for submitting the revised bid as per modified specifications, if any.**
- C. **Special requirement:-** Regulatory clearances/any other clearances from Custom before importing is required, should be clearly mentioned in your quote.

12. COMPLIANCE STATEMENTS:

- a. **Bidders should furnish a Compliance Statement of each and every required Specification of our tender in the format at ANNEXURE –‘B’.** The deviations, if any, from the tendered specifications should be clearly brought out in the statement. Technical literature/leaflet showing the compliance of the specification may also be attached with the quotation.
- b. Similarly, **the Compliance Statement/questionnaire for Terms & Conditions of the tender may be furnished, as per the enclosed format at Annexure –‘A’**, along with quotation (with techno- commercial bid in case of two bid tender system).
- c. The firms are advised to submit both the compliance statements essentially along with their quotation failing which their offer may not be considered.

- 13. PERIOD & MODE OF DELIVERY:** The delivery period is the essence of supply; hence it must be indicated specifically in the quotation. Mode of delivery, tentative size and weight of consignment may also be indicated in the quotation.
- 14. PERFORMANCE SECURITY:** All the successful bidders will have to submit the Performance Bank Guarantee or establish a Standby Letter of Credit (SLOC) or a Bankers cheque / or FDR pledged in favour of DIRECTOR, CSIO for required amount as per payment terms mentioned at clause 15 below except where supplier opts for release of amount equivalent to PBG after expiry of warranty period. The PBG format shall be provided to the successful bidder later on along with the purchase order.
- 15. PAYMENT CONDITION:**
- A. FOR INDIGENEOUS SUPPLIES:**
Payment on Bill Basis after supply through RTGS/Banking details should be mentioned on the Invoice.:
For local supplies the payment will be made only after satisfactory installation, commissioning and performance of the equipment at Central Scientific Instruments Organisation, Chandigarh and after certification by our technical expert/scientist. However, supplier will be required either to submit performance bank guarantee for **10%** amount of the total value of equipment, after installation of the material, valid up to 60 days after the expiry of warranty period or the equivalent amount shall be released after expiry of the satisfactory warranty period.
- B. FOR IMPORTS:**
- i) **CSIR-CSIO is govt. Organisation engaged in R&D activities, hence no advance payment will be made.**
ii) **Within 30 days through wire transfer after receipt of material in good condition & satisfactory installation+ PBG wherever applicable.**
ii) The payment against imports shall be made through irrevocable L/C. **L/C will be opened for 100% FOB/CIF value against submission of Performance Bank Guarantee (PBG) for 10% of the ordered value valid for warranty period + 60 days + delivery period+ installation period. The PBG should be submitted within 21 days of placement of order. The above PBG will be invoked in case the equipment fails to give the desired performance. The PBG will also be invoked in case the firm fails to reimburse the amount of Liquidated Damage for delayed supply/installation/information for the clearance of the equipment thus causing demurrage.**
- 16. COMMENCEMENT OF WARRANTY PERIOD:** The warranty period of an item shall commence from the date of receipt of the item in good working condition and satisfactory installation/commissioning/demonstration at the project site in Central Scientific Instruments Organisation, Chandigarh. The warranty period and validity of Performance Guarantee shall be extended for the period of delay in satisfactory installation and delay in warranty services.
- 17. NO ADVANCE PAYMENT:** CSIR-CSIO is a Govt. Organisation. No advance payment will be made to any supplier. Accordingly refer Sr. No. 15 for payment terms.
- 18. INSTALLATION:** The equipment should be installed/commissioned and demonstrated, by the supplier at the lab immediately but in any case within **30 days** after receipt of the item in the lab and the same will be put under operation to the satisfaction of our technical expert/Scientist who will test the performance of the equipment. No separate charges for installation etc. will be paid to the party beyond the quoted prices.
- 19. GUARANTEE/WARANTEE:** The equipment/instrument must be guaranteed/warranted for a period of at least **one year, if not specifically mentioned otherwise in the specifications sheet, from the date of its satisfactory installation/commissioning** against all manufacturing defects. If the equipment is found defective during this period the whole equipment or part thereof will have to be replaced/repared by the supplier free of cost at the lab. or at site of the supplier for which 'to and fro' expenses will be borne by the supplier. However, if the items are guaranteed for a period of more than one year, it may be specifically mentioned in the quotation.
- 20. SPARE PARTS:** Availability of spare parts of the equipment/instrument must be guaranteed for a period of at least seven years from the date of supply/as asked in specification whichever is later.
- 21. AFTER SALES SERVICES:** It should be clearly mentioned in the quotation whether the after sales services during and after the completion of warranty shall be provided directly by the supplier or their authorized agent/representative. Terms of the after sales services, if any, may be mentioned in the offer. However, in both the cases the original supplier shall be responsible for poor performance/services.

22. INSPECTION :

- a) The inspection of the system will be done by our technical expert /Scientist in the presence of firm's representative.
- b) In case of receipt of the material in short supply or damaged condition the supplier will have to arrange the supplies/ replacement of goods free of cost pending the settlement of the insurance case wherever applicable on FOR at the lab. or CIF basis till satisfactory installation of the system.
- c) The supplier **should arrange for physical inspection of the items directly or through their authorized representative within seven days of arrival of the consignment failing which they will be responsible for the losses.** After the shipment is effected, the supplier/its representative/Indian agents must remain in touch with the lab/instt. to ascertain the date of arrival of consignment.

23. AUTHORIZATION OF INDIAN AGENTS & INDIAN REPRESENTATIVE:

- a) In case there is involvement of an /Indian agent/representative in any form as mentioned at (b) below, an authority letter / copy of agreement from the principal manufacturer must be submitted with the quotation.
- b) Where quoting party/Indian representative claims to be the subsidiary or branch office or an authorized representative of the principal foreign manufacturer/supplier in India, then a copy of approval from RBI/Ministry for operating business in India as Subsidiary/Branch/Liaison office or Joint-Venture may be submitted with offer.
- c) Indian agency commission shall be paid only to the Indian Agents in Indian Rupee out of the quoted FOB/Ex-works prices, after receipt of goods in good working condition & satisfactory installation/demonstration/commissioning of the items.

24. USERS LIST :

- a. The list of users specifically for the same model/make of the quoted item (not the list of general users) along with the complete name, address & contact numbers of the user organizations/persons may be submitted with the quotation along with the performance certificates from all/some of them.
- b. **If you have supplied identical or similar equipment to other CSIR Labs./Instts., the details of such supplies for the preceding three years shall be given together with the prices finally paid.**

25. PENALTY CLAUSE FOR LATE DELIVERY & LATE INSTALLATION:

- a) **Subject to operation of Force Majeure, time for delivery and acceptance is the essence of this contract. The supplier shall arrange to ship the ordered materials within the delivery period mentioned in the order unless extended with/without penalty.**
- b) In case of delay in supply and/or late installation of the equipment/instrument on part of the supplier, a penalty @ 0.5% per week of Order/FOB value will be charged for delayed period subject to a maximum of 10% of order/FOB value.
- c) If the delay in the shipment of the ordered materials attributable to the supplier exceeds agreed time period from the date of original agreed upon date of shipment and extended with/without penalty, the Central Scientific Instruments Organisation, Chandigarh shall have the right to cancel the contract/purchase order and recover the liquidated damages from other dues of the party or by legal means. It will also affect the other/future business dealings with such suppliers.

26. TRAINING: Wherever needed, Our Scientist/Technical persons should be trained by the supplier at the project site free of cost. In case the person is to be trained at supplier's site abroad or in India it should be mentioned in the quotation clearly, the cost to be incurred, if any must be separately indicated in the bid.

27. NON-SUBMISSION OF TENDER: In case you are unable to submit your quotation against our tender enquiry we would appreciate and expect a note of regret from your side giving in brief, reasons for not quoting.

28. DELETION OF NAME : Names of bidders, backing-out/defaulting after opening of tenders will be recommended for deletion from the list of suppliers in addition to forfeiture of EMD submitted by them, if any.

- 29. LATE/ DELAYED /UNSOLICITED QUOTATION:** Late or delayed/Unsolicited quotations/offers shall not be considered at all. These will be returned to the firms as it is. Post tender revisions/corrections shall also not be considered.
- 30. ACCEPTANCE OR REJECTION OF OFFER:** The Director, Central Scientific Instruments Organisation, Chandigarh reserves the right to accept or reject any quotation /tender in part or full without assigning any reason thereof. The successful bidder should submit Order acceptance within 15 days from the date of issue.
- 31. PAGE NUMBERING & SIGNATURES:** Your offer should be a page numbered and signed by an authorized signatory giving his/her name and designation below the signatures.
- 32. INTERIM ENQUIRIES:** No interim inquiries will be attended.
- 33. FORCE MAJEURE:** The Supplier shall not be liable for forfeiture of its performance bank guarantee, liquidated damages or termination for default, if and to the extent that, it's 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.
- 34.** That the bidder may question the bidding conditions, bidding process and/or rejection of its bids in writing as per the provisions of Rule 173 of the General Financial Rules 2017.
- 35. DISPUTE SETTLEMENT:** All disputes arising out of this contract shall be referred to the sole arbitration of the Director General of Council of Scientific & Industrial Research (CSIR) and Secretary, Department of Scientific & Industrial Research (DSIR) Govt. of India or his nominee, who is overall controlling authority of this laboratory as per the provisions of Indian Arbitration and Reconciliation Act 1996 and his award shall be final and binding on the parties to the dispute. However, in case of importers, the provisions related to Arbitration as per the United Nations Commission on International Trade Laws (UNCITRAL) will be applicable and binding on both the parties. The venue of arbitration in both the above cases will be CHANDIGARH, U.T. (INDIA).

Controller of Stores & Purchase

Encl:

1. Format for Compliance of Terms & Conditions.
2. Different Forms/ Formats enclosed as Annexure(s)
3. Set of Specifications

FOR ANY CLARIFICATIONS ON THE ABOVE TERMS & CONDITIONS PLEASE CONTACT:-

Mohinder Kumar
Controller of Stores & Purchase
e.mail : cosp@csio.res.in
Phone : 0172-2652651 (Telefax)

FORMAT/QUESTIONNAIR FOR COMPLIANCE OF TERMS AND CONDITIONS

Tender No.: _____

Due Date _____

NOTE:

1. Quotation will not be considered without submission of this format.
2. If a particular question is not at all applicable please write NA in compliance part in Col. No. 4 below.
3. Kindly see the relevant terms & conditions of the tender document as mentioned in Col. No. 3 in each question before replying to the questions mentioned in Col. 2 below).

SNo	Terms & condition of Tender document	Relevant Clause No. of the tender terms & conditions of the tender	Whether acceptable (say 'Yes' or 'No' (preferably use different colour ink for 'No')	Deviation from tender terms, if any, with reasons for noncompliance or alternative condition quoted for
1	2	3	4	5
1	a.) Whether quotation is direct from Principal supplier/manufacturer or their own office in India (Please specify)	Clause 2(a)		
	b) Whether quotation is being submitted by Indian Agent/authorized distributor/ dealer	Clause 2(a)		
	c) Whether the agent is registered with DGS&D/NSIC	Clause 4(a)		
2	a) Whether the Techno-commercial and price bids (for two bid tender system only) have been kept in separate envelopes duly marked with "Techno-commercial Bid" and "Price Bids" respectively.	Clause 2(l)		
	b) Whether the tender No., Due date & Opening dates have been written outside all the envelopes.	Clause 2 (m)		
3	Whether techno-commercial Bid contains EMD, technical literature/leaflets, detailed specifications & commercial terms & conditions etc. as applicable.	Clause 2(n)(A)		

4	a) Whether the required EMD is being submitted with the quotation till bid validity	Clause 4		
	Please specify the form of EMD whether in the form of DD/bank guarantee or TDR/FDR (Please mention No., date & amount of EMD documents.) or Bid Security Format at Annexure –‘C’	Clause 4		
	b) Pre-receipted bill for refund of EMD is enclosed (for bank drafts only)	Clause 4		
5	a) If the prices are on Ex-Works basis or FOB (names port of shipment) or FCA (named place of delivery abroad)	Clause 5 (A) & (B)		
	b) Whether specific amounts or percentage of expenses like packing, forwarding, handling, freight, insurance, documentation etc. have been mentioned in quotation separately in clear terms.	Clause 5(B), (C) & (D)		
6	a) Whether prevailing rates of GST & other govt. levies (for indigenous supplies) have been given in quotation	Clause 5 (A), (C) & (D)		
7	Have you mentioned the validity period of the quotation as per our requirements	Clause 6		
8	a) Whether the Price reasonability Certificate is submitted with quotation	Clause 9 (b)		
	b) Whether copies of last two supply orders of the same item from other customers have been attached with the quotation	Clause 9 (c)		
	c) If there is any difference in prices of last two orders & those quoted to us. If yes, please give reasons for the same	Clause 9 (c)		
	d) Whether supplied in CSIR Labs.	Clause 9 (d)		
9	Whether rates/amount of AMC after the warranty period is over has been mentioned	Clause 10		
10	Have you gone through the specification Clause & complied with the same	Clause 11 (A), (B)& C		
11	a) Whether the Make/Brand, Model number and name of manufacturer has been mentioned in the quotation and Printed technical literature/ leaflets of quoted items have been submitted b) Is this material require regulatory clearances from Customs ?			

12	Whether compliance statement of specifications has been attached with the quotation.	Clause 12 (a) & annexure- 'B'		
13	a) Whether the delivery period for supply of the items has been mentioned	Clause 13		
	b) Whether mode of delivery & tentative size & weight of the consignment has also been indicated	Clause 13		
14	Do you agree to the submission of Performance Bank Guarantee/Standby L/C and have you mentioned in your quotation about this.	Clause 14		
15	a) Do you agree with the payment terms for indigenous supplies?	Clause 15A		No deviation permitted
	b) Do you agree with the payment terms for imports supplies?	Clause 15 B		
16	Do you agree about the date of commencement of warranty period & its extension is necessary.	Clause 16		
17	a) Who will install/commission and demonstrate the equipment at lab. FREE OF COST	Clause 18		
	b) Will you be able to do it within a month	Clause 18		
18	Have you mentioned the guarantee/warranty period in your quotation and do you agree with guarantee clause?	Clause 19		
19	Spare parts	Clause 20		
20	After Sales service	Clause 21		
21	a) Do you agree that on receipt of material in damaged condition or short supply you will replace the same on CIF basis, free of cost pending the settlement of the insurance claim?	Clause 22 (b)		
	b) Do you agree with the clause of physical inspection?	Clause 22 (c)		
22	For Import Cases only: If the party is a subsidiary or corporate branch office of the foreign supplier, then whether copy of the approval from Reserve Bank of India is attached with the offer	Clause 23(b)		

23	Whether list of specific user's for the same item & model as quoted along-with performance certificates from the users is submitted with offer	Clause 24		
24	Whether you agree to the penalty clause for late delivery & installation?	Clause 25 (a to d)		
25	Whether training to our scientist/technical person will be given free of cost . If yes, have you specified in quotation whether it will be in our lab? Or at supplier's site in India or abroad.	Clause 26		
26	a) Whether all the pages have been page numbered?	Clause 31		
	b) Whether quotation has been signed and designation & name of signatory mentioned.	Clause 31		
27	Do you agree to settle the issue through the sole arbitration of the DG, CSIR or his nominee?	Clause 35		

Signatures of the authorized signatory _____

Name of the signatory _____

Designation _____

Name & Seal of the quoting party _____

Dated: _____

Annexure-‘B’

FORMAT OF COMPLIANCE STATEMENT OF SPECIFICATIONS

S. N.	Name of specifications/ part / Accessories of tender enquiry	Specifications of quoted Model/ Item	Compliance Whether “YES” Or “NO”	Deviation, if any, to be indicated in unambiguous terms	Whether the compliance / deviation is clearly mentioned in technical leaflet/ literature
1	2	3	4	5	6

BID SECURITY FORM

Whereas (Hereinafter called “the tenderer”) has submitted their offer datedfor the supply of (Hereinafter called “the tender”) against the purchaser’s tender enquiry No. _____

KNOW ALL MEN by these presents that WE (Name of bank) of (Name of country), having our registered office at (Address of bank) (Hereinafter called the “Bank”), are bound unto ... (Name of purchaser) (Hereinafter called “the purchaser”) in the sum of for which payment will and truly to be made to the said Purchaser, the Bank binds itself, its successors, and assigns by these presents. Sealed with the Common Seal of the said Bank this day of..... 20.....

THE CONDITIONS OF THESE OBLIGATIONS ARE:

1. If the tenderer withdraws or amends, impairs or derogates from the tender in any respect within the period of validity of this tender.
2. If the tenderer having been notified of the acceptance of his tender by the Purchaser during the period of its validity.
3. If the tenderer fails to furnish the Performance Security for the due Performance of the contract.
4. Fails or refuses to accept/execute the contract.

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

The guarantee shall remain in force up to and including forty five (45) days after the period of the bid validity, and any demand in respect thereof should reach the Bank not later than the above date.

.....
(Signature of the authorized officer of the Bank)

Name and Designation of the Officer
Seal, Name & Address of the Bank and address of the branch

PRICE SCHEDULE FOR GOODS BEING OFFERED FROM ABROADName of the Bidder _____
No. _____

Tender

1 Sl No	2 Item Description	3 Country of origin	4 Unit	5 Qty	6 Unit Price		7 Total price (5x6)		8 Charges for Insurance & transportation to port/ place of destination		9 Total Price (7+8)
					FOB (named port of shipment)	FCA (named place of delivery)	FOB (named port of shipment)	FCA (named place of delivery)	Ocean	Air	

Total Bid price in foreign Currency _____
in words.**Signature of Bidder****Name:****Business Address:****Note:**

- (a) Indian agents name & address _____
- (b) Installation, commissioning & training charges, if any _____
- (c) Cost of Spares _____
- (d) The Indian agent's commission shall paid in Indian Rupees only based on the Exchange Rate prevailing on the date of negotiation of documents.
- (e) The cost of optional items shall be indicated separately.
- (f) AMC Charges after warranty _____

PRICE SCHEDULE FOR GOODS BEING OFFERED FROM INDIAName of the Bidder _____
No. _____

Tender

1	2	3	4	5	6	7	8	9	10	11
Sl. No.	Item Description	Country of Origin	Unit	Qty	Ex-Works. Ex-Warehouse, Ex-show room off the shelf price (inclusive of all taxes already paid)	Total price Ex-Works. Ex-Warehouse, Ex-show room off the shelf price (inclusive of all taxes already paid) 5x6	GST & other taxes payable, if contract is awarded	Packing & forwarding up to station of dispatch, if any	Charges of inland transportation, insurance up to Lab./Instt.	Installation, Commissioning & training charges, If any.

Total Bid price in foreign Currency _____
in words.

Signature of Bidder

Name:

Business Address:

Note:

- (a) The cost of optional items shall be indicated separately.
- (b) Cost of spares _____
- (c) AMC Charges after warranty _____

MANUFACTURER’S AUTHORIZATION FORM

[The Bidder shall require the Manufacturer to fill in this Form in accordance with the instructions indicated. This letter of authorization should be on the letterhead of the Manufacturer and should be signed by a person with the proper authority to sign documents that re binding on the Manufacturer]

Date: *[Insert date (as Day, month and year) of Bid submission]*

Tender No.: *[Insert number from Invitation for Bids]*

To: *[Insert complete name and address of Purchaser]*

WHEREAS

We *[insert complete name of Manufacturer]*, who are official manufacturers of *[Insert type of goods manufactured]* having factories at *[insert full address of Manufacturer’s factories]*, do hereby authorize *[insert complete name of Bidder]* to submit a bid the purpose of which is to provide the following goods, manufactured by us *[insert name and or brief description of the goods]*, and to subsequently negotiate and sign the contract.

We hereby extend our full guarantee and warranty in accordance with **Clause 19** of the Terms and Conditions of Contract with respect to the Goods offered by the above firm.

Signed: *[insert signature(s) of authorized representative(s) of the Manufacturer]*

Name: *[insert complete name(s) of authorized representative(s) of the Manufacturer]*

Title: *[insert title]*

Duly authorized to sign this Authorization on behalf of: *[insert complete name of Bidder]*

Dated on _____ day of _____ *[insert date of signing]*

PREVIOUS SUPPLY ORDERS FORMAT

Name of the Firm _____

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

Signature and Seal of the Manufacturer/ bidder

Place:

Date:

BIDDER INFORMATION FORM

[The Bidder shall fill in this form in accordance with the instructions indicated below. No alterations to its format shall be permitted and no substitutions shall be accepted. This should be done on the letter head of the firm]

Date: *[Insert date (as day, month and year) of Bid Submission]*

Tender No.: *[Insert number from invitation of bids]*

Page 1 of _____ pages

1. Bidder's Legal Name *[Insert Bidder's legal name]*
 2. In case of JV, legal name of each party: *[insert legal name of each party in JV]*
 3. Bidders actual or intended Country of Registration : *[insert actual or intended country of registration]*
 4. Bidder's year of registration: *[insert Bidder's year of registration]*
 5. Bidder's Legal Address in Country of Registration: *[insert bidder's legal address in country of registration]*
 6. Bidder's Authorization Representative Information
Name: *[insert Authorization Representative's name]*
Address: *[insert Authorization Representative's address]*
Telephone/Fax numbers: *[insert Authorization Representative's telephone/fax numbers]*
Email address: *[insert Authorization Representative's email address]*
 7. Attach are copies of original documents of : *[check the box(es) of the attached original documents]*
Articles of Incorporation or Registration of firm names in 1 above.
-

Date & time for submission of Tender: 3rd October, 2019 upto 3.00 P.M.
Date & time for Opening of Tender: 3rd October, 2019 at 3.30 P.M.

EMD Rs.1.40 lakhs

Tender No. CSIO/3(1)/2019-Pur

Specifications of Vacuum Sputtering Coating System

A. Coating Chamber:

S/n.	Requirement/Parameters	Required Type/Value
A.1	Material	Stainless Steel SS 304L
A.2	Configuration	Box Type
A.3	Chamber Size	600 mm Diameter
A.4	Front Side	Hinged Full Opening Door
A.5	Base Plate	Bottom side of the chamber with adequate feedthroughs for various connections
A.6	Circulation of Hot/Cold Water	Provision for circulation of Hot/Cold water around the chamber
A.7	Viewing ports	Minimum 1 No.
A.8	Stainless Steel Liner	Two Sets of Stainless-Steel Liners for chamber walls and two sets of shutters for sources to prevent deposition and easy cleaning

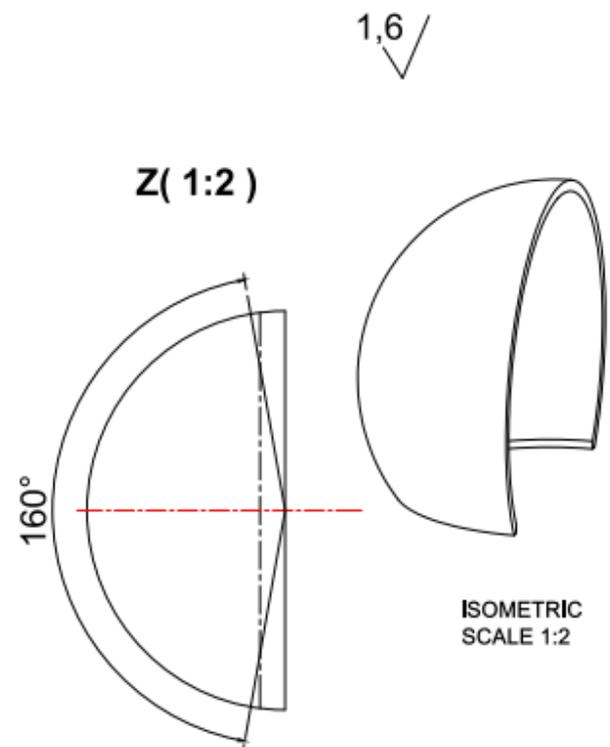
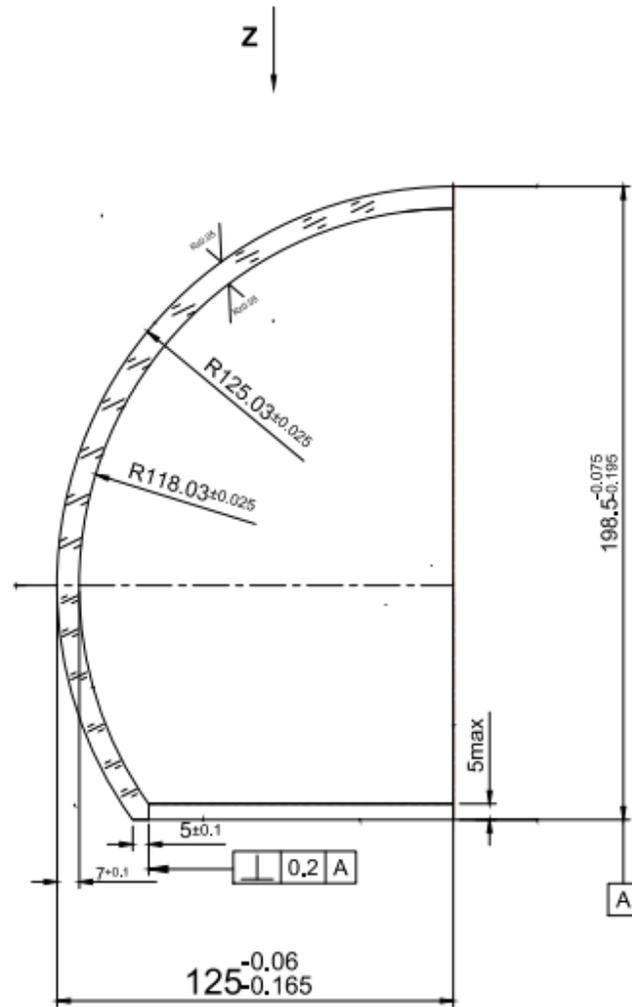
B. Chamber Gadgets

S/n.	Requirement/Parameters	Required Type/Value
B.1	Vacuum Parameters	The equipment should be able to achieve vacuum better than 5×10^{-6} mbar in 60 minutes or less of pumping time from atmosphere at room temperature
B.2	Ultimate Vacuum	$\leq 5 \times 10^{-7}$ mbar
B.3	Pumping System	Turbo Molecular Pump (1 No.) – Minimum Pumping speed 1000 l/s (Make: Pfeiffer/Leybold/Edwards)
		Rotary Pump (1 No.) – Minimum Pumping Speed of 28 m ³ /hour (Make: Pfeiffer/Leybold/Edwards)
B.4	Mass Flow Controller	The equipment should comprise of two Mass Flow Controllers to control the flow of Argon, oxygen into the sputtering chamber. (Flow range 0 - 100 sccm or higher) (Make: Brookes/MKS/Bronkhorst)
B.5	Magnetron Sources	Two magnetron sources for sequential deposition of two materials (Source size 6" or higher to meet the uniformity requirements as mentioned in B.11)

		Make: Gencoa/Angstrom Sciences/Meivac/AJA Int Inc
B.6	Power Supply	One RF Power Supply of 600 W or higher The power supply must be interfaced to both the targets for sequential deposition of two materials. (Make: Hüttinger/Advanced Energy/Seren/Bdiscom)
B.7	Coating Material and Substrate Type	The equipment should be able to deposit any combination of metals, metal alloys, composites, semiconductors, insulators on semiconductor / glass/ metal/ plastic substrates.
B.8	Substrate Heater	The equipment should have provision for substrate heating up to 500 °C (working temperature, also under oxygen ambience) with PID controller.
B.9	Substrate Holder	Provision for holding both flat (of size up to 8") and curved surface (of diameter up to 8" and depth approx. 5") inside the chamber for coating
B.10	Substrate Rotation	The equipment should have provision so that the substrate holder can provide in-situ rotation (Circular or planetary or both) while heating to achieve required uniformity
B.11	Vacuum Gauges	The system must include suitable digital gauges (2 Nos. Pirani, 1 No. Penning/high vacuum Gauge and 1 No. capacitance vacuum gauge) for measurement of vacuum in roughing, backing line and in chamber. (Make: Pfeiffer/Edwards/Inficon)
B.12	High Vacuum Valve	Suitable Gate Valve (Make: VAT/Pfeiffer/HVA)
B.13	Coating Uniformity	<ul style="list-style-type: none"> • $\pm 2\%$ over 8" flat substrate (Using Single layers of SiO₂, ZrO₂, Al₂O₃, TiO₂) • $\pm 5\%$ over 8" curved substrate (drawing attached) (Using Single layers of SiO₂, ZrO₂, Al₂O₃, TiO₂) • For curved surfaces, both the inner and outer surfaces need to be coated. • The supplier needs to provide a test certificate for the above requirement of uniformity along with the equipment. • The same uniformity tests shall be repeated in CSIO after installation to complete the 'final acceptance' of the system.
B.14	Future Upgradation	<ul style="list-style-type: none"> • The system must have adequate feedthroughs and provisions for future upgradation for installation of Thickness Monitor and Pulsed DC power supply.

C. Other Items:

S/n.	Requirement/Parameters	Required Type/Value
C.1	Warranty	<ul style="list-style-type: none"> • 1 Year Warranty from the date of Installation. • Original warranty certificates are to be provided from the OEM for all the imported items. • Any malfunction or breakdown shall be attended to by a qualified engineer at the earliest but not later than 15 days during the warranty period. • If the total period of time in which the machine is not operational exceeds 30 days in a single stretch, the warranty period shall be extended by the same period of time.
C.2	AMC	The firm must quote the AMC price for next 5 years after the expiry of the warranty period.
C.3	Spare parts	The firm must quote necessary spare parts for 2 years.
C.4	Coating targets	Suitable targets for the system for final acceptance test to be quoted. (Material: SiO ₂ , ZrO ₂ , Al ₂ O ₃ , TiO ₂)
C.5	Automation	The system must include required software for automatic deposition (with auto-switchover of RF power supply between two magnetron sources) and remote operation through HMI module.
C.6	Touch Screen HMI	Touch Screen HMI with keyboard, Mouse and USB Flash Drive support for data transfer and Storage
C.7	UPS	UPS with back-up time of minimum 30 minutes for HMI and control panel
C.8	Air Compressor & Chiller	One No. of suitable compressor and Chiller unit for the smooth operation of the system.
C.9	Training	At least 5 days training and uniformity tests at site (CSIO, Chandigarh) after installation of the complete system
C.10	Miscellaneous Items	The vendor should quote any other accessory, if required for the smooth operation of the system.
C.11	Price Quote	In the price bid, the firm must quote the prices of all the consumable items separately.
C.12	Documentation	<p>One set of following documents has to be provided with the system:</p> <ul style="list-style-type: none"> • Operation Manual • Spare Parts List • Electrical wiring diagram • Machine test and conformance report



GEN TOL IS: 2102(Part-1)-1990						
ABOVE	0.4	0	0	30	100	215
UP TO	3	0	30	120	315	1800
TOL +	0.05	0.1	0.15	0.2	0.3	

REMOVE SHARP EDGES & BURRS		TOL MET AFTER SURFACE TREATMENT	
PT NO. 01	NO. OFF: 01		DRN 11.7.18 PS
MATERIAL: ZnS			CHD 12.7.18 SS
SIZE:			PASD 12.7.18 ALS
SURFACE TREATMENT		DOME 	SCALE 1:1,1:2
REF:			OP 23M02 SH 1 OF 1 SHS

Date & time for submission of Tender: 3rd October, 2019 upto 3.00 P.M.
Date & time for Opening of Tender: 3rd October, 2019 at 3.30 P.M.

EMD Rs.1.96 lakhs

Tender No. CSIO/3(2)/2019-Pur

High speed camera with following specifications

- 1) Camera Speed :**
 - i. 20,000 or more frames per second @ One mega pixel resolution
 - ii. One million or more frames per second @ reduced resolution
 - iii. Camera speed control option
- 2) Sensor Size :**
 - i. Horizontal 20 mm or more
 - ii. Vertical 20 mm or more
- 3) Sensitivity (ISO12232) :** ISO 50,000 or more (Monochrome)
- 4) Shutter type :** Global electronic shutter
- 5) Minimum exposure time:**
 - i. less than or equal to 300 ns in FAST mode
 - ii. less than or equal to 1 μ s in standard mode
- 6) Bit depth :** 12 bit monochrome or more
- 7) Operating temperature range:** 0 to + 45 degree Celsius or beyond
- 8) Storage temperature :** -20 to +60 degree Celsius or beyond
- 9) Humidity condition at which camera should work:** 80% (Non condensing) or more
- 10) Power Supply :** 100- 240V AC, 50-60 Hz
- 11) Internal Memory Storage:** 128 GB or more and option of removable storage
- 12) Option of cooling :** Internal cooling fans (with fan-off option)
- 13) Weight of Camera :** without lens camera weight < 11kg
- 14) Camera control options :** On camera and through external software control
- 15) Data Interface :** 1GB Ethernet or high

Notes:

- Suitable trigger option for input and output
- Software: image analysis software
- Accessories: adapter, cables, power supply, battery etc.
- Optional external storage: Quote for 1 TB and 2Tb

Quotation should be complete with all accessories and software included to achieve proper functioning of the camera in Indian environment.

17th September, 2019 at 11.00 A.M.

EMD Rs.NIL

Tender No. CSIO/3(12)/2019-Pur

EXPRESSION OF INTEREST

OPTICAL DEVICES & SYSTEMS

SUBJECT: Online inspection, metrology, Portable CMM and Reverse Engineering Equipment

The department is working on design, fabrication, assembly and evaluation of opto-mechanical components for various societal and strategic projects for Indian Air Force sponsored by Aeronautical Development Agency (ADA) & Hindustan Aeronautics Limited (HAL), Bangalore and Department of Science and Technology (DST), New Delhi. In addition to this, the department is supporting the different Aircraft fleet of Indian Air Force/Navy for various opto-mechanical calibrations and the Scientists/Technical Officers visit regularly at various HAL and Indian Air Force/Navy Depots located at different parts of the country. Based upon the expertise, ADA, HAL, Indian Air Force & Navy and other agencies has either sanctioned or are in process of sanctioning the different works which needs redesign, online metrology both in CSIO testing lab and at the user site in different fields. geometric CAD model from 3D points acquired by scanning/ digitizing the existing products. Computational metrology which has recently begun to play a prominent role is the next generation for all these engineering systems. Indeed, this field has become essential due to the use of advanced inspection technologies in manufacturing industries and different field applications. In response, new methodologies have been developed to cope with the complex metrology problems of registration, data fusion, surface reconstruction, and handling tolerances of the sampled data. These computational metrology methods are used mainly for design, manufacturing, inspection, and quality control applications.

There is an urgent need of a new Technology which has the facility of all the required activities and is portable. As per the surveys, interactions and feedbacks portable CMM with laser and scanner and touch probe metrology and inspection capability with the accessories and soft-wares is the latest solution. There are lot of OEM's and has wide market. No such technology is available in CSIO. Hence it is planned to buy this technology from a reputed brand. It will be used in the online inspection and metrology for the ongoing projects and future calibrations and projects and reverse engineering.

- **Basic Modules**

1. Touch Probe, Scanner, Portable Arm, CMM, Reverse Engineering
2. Ready to use with latest technology 3D scanner with flexible portable arm/equipment for CMM with compatible software
3. 7-axis or portable or portable free arm type CMM etc as per latest and qualified and valid technology.
4. Hassle free calibration.
5. Standard specimen for occasional calibration can be provided.
6. Machine should be capable of carrying out manual/contact type measurements with the help of Probe also.

- **Numerical Parameters of Probe**

1. Measuring Range: 1.5 meters Diameter/Volume or above
 2. Infinite rotation for all axis or the best to suit the applications.
 3. Internal counter balancing or stable for efficient operation.
 4. Robust, sturdy and lightweight construction
 5. Accuracy: $\pm 0.035\text{mm}$ or better
 6. Repeatability: 0.025mm or better
 7. Point acquisition rate: 5,60,000 points/second or higher to suit the best
 8. Points per line: 2000 or higher to suit the best.
 9. Line Rate: 30hz or better.
 10. Line Width: 80mm or better.
 11. Resolution: 40 microns or better.
 12. Depth of Field: 100mm or higher.
 13. Minimum Load: 15-25Kg or better to suit the portability.
 14. Resolution: 0.05°
 15. Rotation Speed: $10^\circ/\text{Sec}$
 16. Class 2M or better safety standard.
 17. Scanner should be detachable/ external/separate only.
 18. The scanner should be capable of scanning any surface without the need for surface preparation
 19. Multiple alignments within one project: automatic pre-alignment, 3-2-1, plane line point & Best fit & updating of alignments should be possible
 20. Complete CAD comparison: Surface, sections, points etc.
 21. CAD based primitives' generation: line, planes, circle, cylinders, cones etc.
 22. 2D section based analysis
 23. Inspection functions: Dimensions, virtual calipers, angles, diameters etc.
 24. Measurement: Fixed standoff distance for all measurement volumes/ field of views.
 25. Camera Resolution: 5 Mega pixels or better
 26. Acquisition time per view: 2 sec or better
 27. Light source: Blue light/LED or better with minimum 20000 hours of life span
 28. Field of View: The system should be modular and upgradeable with possibility of additional lens sets/ optics etc. for obtaining different FOV and to upgrade system to a higher resolution.
 29. Rotary positioning System for 3D directional scanning:
 30. Scanner should have:
 31. The system should be easy and simple to setup with the possibility to change only the lenses for adopting different FOV.
 32. There should be no manual setting of focus at both projector and camera lenses.
 33. The system should be equipped with guided pointers for visualizing the optimum measuring distance.
 34. 5m sensor cables
 35. Power supply
-

36. The system should have ability to calibrate for the entire measurement volume and applicable calibration plates to be supplied.
37. Support probing & scanning techniques without disturbing alignment and reference
38. Allow measurements of all geometric features and automatic feature recognition.

- **Reverse Engineering/CAD**

1. Convert point cloud data into high quality, water tight polygon or triangle mesh.
 2. Reconstruction of CAD faces using fitted NURBS surfaces.
 3. Capable of comparing CAD Features with inspected data in both online & offline modes
 4. Supports all standard CAD formats like STL and IGES
 5. Capable of aligning data from multiple positions for inspecting large parts
 6. System software GUI based and user friendly. The software must include mesh generation algorithm, etc. It should be capable of generating application based STL and can perform several routine functions such as, point cloud to CAD alignment. Import of common CAD data formats: CatiaV5, Creo, Unigraphics.Solid Works, IGS, STEP, JT-Open, Parasolid etc.
 7. Software supported calibration status, transformation accuracy, environmental changes & part movement.
 8. Inspection information should be continuously derived & displayed from the complete pre-imported or manually created measuring plan & CAD during measurement.
 9. System should have dynamic referencing feature due to which the object or the sensor should be easily & freely moved or positioned, which allows flexible measuring plan & online display of sensor w.r.t. part should also be possible.
 10. Automatic combination of single scans using a process-safe work flow based on a combination of reference points or surface matching.
 11. Software should provide support for setting up new measuring tasks using guided project creation.
 12. Import & export of point clouds and polygon meshes (STL, ASCII, etc.)
 13. Polygon mesh generation & processing
 14. Import of CAD data in standard formats: IGES, STEP, STL and compatible with all 3-D softwares.
-

Date & time for submission of Tender: 3rd October, 2019 upto 3.00 P.M.
Date & time for Opening of Tender: 3rd October, 2019 at 3.30 P.M.

EMD Rs. 50,000/-

Tender No. CSIO/3(17)/2019-Pur

**TECHNICAL SPECIFICATIONS FOR AUTOMATED ANALYTICAL CUM SEMI-
PREPARATIVE HIGH PERFORMANCE LIQUID CHROMATOGRAPHY (HPLC) SYSTEM**

Specifications:

1. Pump Module:

- Delivery System: Quaternary gradient pump
- Flow rate range: 0.01ml to 10.0ml per minute or better
- Max. operating pressure: 5000psi or more
- Flow rate accuracy: $\pm 1\%$ or better

2. Photodiode Array (PDA) Detector:

- Wavelength range: 190-800 nm or better
- Wavelength accuracy: ± 1 nm or better
- Drift: 1×10^{-3} AU/hour or less
- Noise levels: 1×10^{-5} AU or less
- Linearity of 2.0 AU (ASTM method) or more
- Analytical and semi preparative flow cell: 2 pcs each

3. Refractive Index Detector:

- Refractive index range: 1 to 1.75 RIU
- Noise Level: 2.5×10^{-9} RIU or less
- Drift: 2×10^{-7} RIU /hour or less
- Flow cell must be temperature controlled 50°C or better

4. Column Oven:

- Should have housing for 2 or more columns
- Temperature setting range: ambient to 60°C or better
- Temperature control precision 0.1°C or less

5. Columns: 1 each

- C-18 Analytical column, $\sim 250 \times 4.6\text{mm}$, $5\mu\text{m}$
 - C-18 Analytical column, $\sim 150 \times 4.6\text{mm}$, $5\mu\text{m}$
 - C-18 Semi-prep column, $\sim 150 \times 10\text{mm}$, $5\mu\text{m}$
 - Normal phase Semi-prep silica column, $\sim 250 \times 10\text{mm}$, $5\mu\text{m}$
 - Neutral Semi-prep alumina column, $\sim 250 \times 10\text{mm}$, $5\mu\text{m}$
-

6. Auto Sampler with cooling:

- Injection volume: 0.1 to 100 μ l, and higher for semi-preparative applications
- Injection volume precision: < 0.3% RSD
- Carry over: <0.05%
- Sampler Capacity: at least 60 or more vials of suitable volumes.

7. Fraction Collector should be programmable: Fraction collector with set of standard racks, with minimum 100 tubes capacity

8. Hardware and Software:

- Desktop computer: Processor Core i7, minimum 8GB RAM, 1 TB hard disk, 21" monitor, and window 10 with Laser printer
- HPLC Software: Compatible software for control, acquisition, processing, etc. from HPLC system
- Software should support all Quantization features such as area normalization, internal and external standards, custom reporting.

9. HPLC Maintenance kit, and manuals

10. Solvent/sample filtration kit, membranes, vials: minimum 01 pack each

11. UPS: 3KVA online UPS with 1 hr power back-up

12. Warranty: Complete support of equipment for a period of 3 Years.

13. Installation and Training: Supplier to provide both on-site and operator training for users on the system start-up, usage, maintenance, quality control, trouble shooting

14. Quoted analytical cum semipreparative HPLC unit should be upgradable in future with Fluorescence/Electrochemical/Conductivity detectors

Note: Supplier must quote latest updated model and the prices item-wise and part numbers supported with the brochure for the basic equipment and essential accessories (make it fully operational) and optional accessories separately.
