



केन्द्रीय इलेक्ट्रॉनिकी अभियान्त्रिकी अनुसंधान संस्थान  
Central Electronics Engineering Research Institute  
पिलानी ( राजस्थान ) 333 031  
Pilani ( Rajasthan)-333 031,INDIA

Fax : 01596 – 242135,242294

Phone : 01596 – 244710

Gram : "ELECTRONIC" Pilani

No. 726/NWP-51/SNG/10-Pur/2009/T-03

Dated: 16.4.2010

**OPEN/GLOBAL TENDER DOCUMENTS**

M/s. \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Sub: **Supply of Plasma enhanced CVD System.**

Dear Sirs,

The Director, Central Electronics Engineering Research Institute (CEERI), Pilani – 333 031, invites you to quote for the stores as per the **SCHEDULE OF REQUIREMENT ANNEXURE-I ON FIXED PRICE BASIS**. Sealed quotation must be submitted on the specified date & time. **THE QUOTATIONS RECEIVED THROUGH FAX/E-MAIL/TELEGRAM/TELEX in open condition will not be considered.**

2. Quotation duly completed in all respects must reach **THE STORES & PURCHASE OFFICER, CEERI, PILANI NOT LATER THAN 2.30 P.M. ON 26.5.2010 AND THE SAME WILL BE OPENED ON 26.5.2010 AT 3.30 PM.** The Due Date & Time and Opening Date & Time will not be extended at all.

**YOU ARE ADVISED TO GO THROUGH THIS DOCUMENT CAREFULLY AND TO COMPLY WITH ALL THE REQUIREMENTS OF THIS DOCUMENT.**

3. **SUBMITTING OF TENDERS:**

Your offer must be split in TWO parts and must be put in separate envelopes and be embossed clearly as follows:

- (a) TECHNO COMMERCIAL BID
- (b) PRICE BID

4. A pictorial representation of the embossment is as follows:

**ENVELOPE – I**

**TECHNO COMMERCIAL  
BID**

Sub.: Supply of Plasma enhanced  
CVD system. .  
CEERI Tender No.726/NWP-51/  
SNG/10-Pur/2009/T-03  
Last date & Time for receipt of  
Tenders 26.5.2010 at 2.30 PM  
Date of opening 26.5.2010 at  
3.30PM  
To  
The Director  
CEERI, Pilani

**ENVELOPE – II**

**PRICE BID**

Sub.: Supply of Plasma enhanced  
CVD system.  
  
CEERI Tender No.726/NWP-51/  
SNG/10-Pur/2009/T-03  
  
Last date & Time for receipt of  
tenders 26.5.2010 at 2.30 PM  
To  
The Director  
CEERI, Pilani.

5. Envelope – I and Envelope – II are then to be put together in another envelope as outer cover. The outer cover should be addressed to THE STORES & PURCHASE OFFICER, CEERI, PILANI – 3333031 (RAJASTHAN) mentioning the details given below.

TECHNO ECONOMIC BID  
ENVELOPE - I

PRICE BID  
ENVELOPE - II

Tender No.726/NWP-51/SNG/10-Pur/  
2009/T-03  
Last date & Time for receipt of  
Tenders 26.5.2010 at 2.30 PM  
Date of Opening 26.5.2010 at 3.30PM  
THE STORES & PURCHASE  
OFFICER,  
C.E.E.R.I.,  
PIALNI – 333 031

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**NOTE: BOTH TEHNO COMMERCIAL AND PRICE BID SHALL BE CLOSED WITH SEALED WAX.**

6. Director, CEERI reserves the right to accept any or all tenders either in part or in full without assigning any reasons thereof.

7. One cover should contain only one Tender.

8. The time, date and place of opening of Price bid will be intimated to the bidders in advance and all bidders or their authorized representative are at liberty to be present during opening of the tenders.

**TO SUMMARISE THE CONTENTS OF ENVELOPE-I AND ENVELOPE-II WOULD BE AS FOLLOWS:**

**Envelope – I (Techno Commercial Bid) must contain**  
Techno Commercial bid. It must contain the following :-

**INSTRUCTIONS :- Chapter - 1**

1. Commercial Terms and Conditions without any indication of price.
2. The tender documents can either be downloaded from CEERI's website [www.ceeri.res.in](http://www.ceeri.res.in) free of cost or may be obtained from the office of Stores & Purchase Officer, CEERI, Pilani – 333 031 (Rajasthan) on payment of Rs. 300/- (NON REFUNDABLE) through a Demand Draft in favour of Director, CEERI, Pilani.
3. A prospective bidder requiring any clarification of the bidding documents shall contact the CEERI in writing at the specified address latest by 7.5.2010 Pre Bid Conference. No request for clarification or query shall be normally entertained after the pre bid conference. Should CEERI deem it necessary to amend the Bidding Documents as a result of a clarification, it shall do so following the procedure under Clause relating to amendment of Bidding documents and clause relating to deadline for submission of Bids. The clarifications and amendments issued would also be hosted on the website of the CEERI for the benefit of the other prospective bidders.
4. The Bid shall be prepared by the bidder, as well as all correspondence and documents relating to the bid exchanged by the bidder and CEERI shall be written in English language only.
5. The vendor must be quoted on FOB/FCA value up-to shipping Airport of the exporting country showing Ex-works prices, packing, forwarding, documentation and inland freight etc.
6. The price quoted by the bidder shall remain un-changed during the contract period and shall not vary on any account.
7. **The vendor must be quoted all lots and items listed and priced separately in the Price Schedules. If a Price Schedule shows items listed but not priced, their prices shall be assumed to be included in the prices of other items. Lots or items not listed in the Price Schedule shall be assumed to be not included in the bid.**

8. **Custom Duty** – We are registered with Department of Scientific and Industrial Research (DSIR) vide TU/VIRG-CDE(39)/2001 dated September 25, 2001 for availing custom duty exemptions under Government Notification No. 51/96 Custom dated 23 July, 1996. We shall pay concessional custom duty.
9. **Excise Duty** – We are exempted from the payment of Excise Duty under notification number 10/97. Hence Excise Duty if any, should be shown separately for which excise exemption certificate will be issued.
10. **Sales Tax** – The percentage of Sales Tax as applicable should also be specified clearly in the quotation. However concessional Sales Tax is allowed by states to R&D units against concessional / Sales Tax Certificate which will be issued along with order. We are not eligible to issue Form “C” or “D”.
11. **Indigenous Supplies** – For Indigenous supplies, the prices should be FOR CEERI inclusive of packing, forwarding, installation and commissioning, freight and insurance charges. In case of Ex-Works Prices, The Packing, Forwarding Freight, Insurance, Installation/ Commissioning charges must be clearly quoted in your quotation. No other charges than those mentioned in the quotation will be paid.
12. **Bid Currencies** – The vendor shall be quoted prices in Indian Rupees for offers submitted for supply within India and in freely convertible foreign currency in case of the items offered of foreign countries.
13. The technical details and specifications of the items must be indicated clearly point by point conforming to the description of the item/specifications enclosed to this tender Annexure – I along with Commercial terms & conditions such as payment terms, delivery date applicable packing, forwarding, freight, insurance, taxes and duties, installation and commissioning. As per Annexure – I. **WHERE THERE IS NO MENTION OF THE ABOVE TERMS AND CONDITIONS SUCH QUOTATIONS SHALL BE REJECTED AS INCOMPLETE.**
14. Our tender specifications/drawings and technical documents duly stamped and signed by your authorized signatory on all pages in toke of acceptance of our tender specifications/technical requirement and terms and conditions.

- 15. Comparative statement of technical offers drawing a comparison between your offered specifications and our tender specifications bringing out clearly the deviations, if any.**
- 16. THE VENDOR MUST BE OFFERED THE VALIDITY OF QUOTATION AS MENTIONED IN TENDER DOCUMENT. IF THE BID VALIDITY IS SHORTER THAN THE REQUIRED PERIOD, SUCH QUOTATIONS SHALL BE REJECTED AS INCOMPLETE.**
- 17. Deadline for Submission of Bids :- Bids must be received by the CEERI at the address specified in invitation for bids no later than the time and date specified therein. In the event of the specified date for the submission of Bids being declared a holiday for the CEERI, the Bids will be received up-to the appointed time on the next working day.**
- 17.1 The CEERI may, at its discretion, extend the deadline for submission of bids by amending the bid documents in accordance with Clause relating to amendment of Bidding Documents in which case all rights and obligations of the CEERI and Bidders previously subject to the deadline will thereafter be subject to the deadline as extended.**
- 18. LATE BIDS :- Any bid received by the CEERI after the deadline for submission of bids prescribed by the CEERI will be rejected. Such tenders shall be marked as late and not considered for further, evaluation. They shall not be opened at all and be returned to the bidders in their original envelope without opening.**
- 19. Pre Bid Conference : A pre bid conference shall be held on 10.5.2010 at 3.00 P.M. Prospective bidders are requested to kindly attend the pre-bid conference in order to clarify issues if any pertaining to specifications ect. All prospective bidders are requested to kindly submit their queries if any (With envelope bearing Tender Number and Date on top and marked “Queries for Pre Bid Conference”) so as to reach CEERI on or before 7.5.2010, CEERI shall answer the queries during the pre-bid conference which would become a part of the proceedings of the pre-bid conference and all the participating bidders shall sign the same. These proceeding will become a part of clarification/amendments to the bidding documents and would become binding on all t he prospective bidders.**

**These proceedings would also be hosted on CEERI Website for the benefit of all the prospective bidders. Before submitting their bids, all prospective bidders are advised to surf through the CEERI Website after the Pre bid conference, in order to enable them take cognizance of the changes made in the bidding document.**

- 20. The original and all copies of the bid shall be typed or written in indelible ink and shall be signed by the Bidder or a person or persons duly authorized to bind the Bidder to the Contract. All pages of the bid, except for un-amended printed literature, shall be initialed by the person or persons signing the bid.**

**Envelope – II (Price Bid) must contain**

1. Quotation letter as Annexure – III
2. **Complete quotation both TECHNO COMMERCIAL AND PRICE with commercial terms and conditions along with charges of Packing, forwarding, freight, insurance, Taxes/duties and installation and commissioning and payment terms, delivery date and validity of quotation etc. As per enclosed format. WHERE THERE IS NO MENTION OF THESE TERMS AND CONDITIONS SUCH QUOTATIONS SHALL BE REJECTED AS INCOMPLETE.**
3. The quotes must signify the capacity in which the quotation has been signed i.e. whether as a Sole proprietor, authorized Partner or as authorized signatory of a company.

**TERMS AND CONDITIONS Chapter – 2**

1. **1. PRICE (A) In case of Import of goods :- The price must be quoted on FOB/FCA value up to under mentioned international Shipping Airport of the Exporting country showing ex-works prices, packing, forwarding, documentation, Bank charges outside India inland freight charges separately.** The Vague terms mentioned in the quotation like “packing, forwarding charges etc. extra” without mentioning the amounts of these charges will not be accepted. The airfreight and insurance shall be arranged and paid directly by us in Indian Rupee at our end.

**Desired Port of shipments :- U.S.A. – New York, Los Angeles, Chicago, Boston, San Francisco, Dallas, Atlanta, U.K. – Heathrow, Germany – Frankfurt, Japan – Tokyo, Netherlands – Amsterdam, France – Paris, Canada – Montreal, Singapore – Singapore, Switzerland – Zurich, Italy – Milan, Hong Kong – Hong Kong, Sweden – Stockholm, Australia – Melbourne, Austria- Vienna, Belgium – Brussels, Denmark – Copenhagen, Taiwan – Taipei, Malaysia Kuala Lumpur, Korea – Seoul, Russia – Moscow, China – Beijing.**

**(B) In case of Indigenous Supplies :-** For Indigenous supplies, the prices should be FOR CEERI inclusive of packing, forwarding, installation and commissioning, freight and insurance charges. In case of Ex-Works Prices, The Packing, Forwarding, Freight, Insurance, Installation/Commissioning charges must be clearly quoted in your quotation. No other charges than those mentioned in the quotation will be paid.

2. **PACKING :-** The goods must be packed by standard packing material and standard export / import packing material in case of import failing which supplier will only be responsible for any damages / discrepancies to the consignment due to poor packing of goods.
3. **PERIOD OF DELIVERY :-** The goods must be delivered within 90 days from the date of firm order positively. However if this delivery period is not acceptable to you, please quote your fixed date of delivery.
4. **VALIDITY OF OFFER :-** The prices must be valid for a period of **six months** from the date of opening of the quotation. No upward changes in prices will be acceptable in any condition after opening of tender.
5. **PRE INSTALLATION REQUIREMENTS –** Pre installation requirements like Space, Power Supply, Water Line or any other essential requirements which are to be kept ready / completed by CEERI before supply of equipment, must be quoted by the bidder clearly in their quotation to avoid the delay in Installation & Commissioning of equipment.
6. **INSTALLATION/COMMISSIONING:-**The equipment must be installed/ commissioned and demonstrated by the supplier at CEERI within 30 days after delivery of goods at CEERI 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.

7. **WITHDRAWAL OF BIDS:-** A bidder, desirous of withdrawing a bid after having it submitted, can do so by sending a written request or notice, in an envelope marked “WITHDRAWAL” prior to the date and time of opening of bid. The Envelope shall be put in the Tender Box. The firms representative, having an authorization certificate can withdraw the bid on the date and time of opening of bid. The withdrawn bid shall returned to him un-opened.
- 7.1 **SUBSTITUTION AND MODIFICATION OF BID(S) :-** A bidder can substitute or modify his bid after submission by sending a written notice in an envelope marked “SUBSTITUTION” OR “MODIFICATION” as the case may be, along with substituted or modified bid respectively. The notice should reach before time of opening of bid. The bidders representative, should produce an authorization certificate to substitute or modify the bid and also to represent the bidder to be present for opening of bid.
- 7.2 The substituted bids shall not be opened and will be handed over to the bidder un-opened.
- 7.3 No bid is permitted to be withdrawn, substituted or modified after being opened on due date and time.
8. **GUARANTEE :-** The equipment must be guaranteed / warranted for a period of one year (Un-conditional warranty) 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 repaired/replaced by the supplier free of cost at CEERI. However, if the items are guaranteed/warranted for a period of more than one year, it may be specifically mentioned in the quotation. In case the firm fails to rectify the defects and equipment is not put to proper function to our satisfaction, the whole equipment will be returned to the supplier at their cost. Either the supplier will replace the whole equipment to our satisfaction or whole money paid CIF/FOR CEERI on the account of purchase of the equipment will be refunded by supplier to CEERI.
9. **SPARE PARTS :-** The availability of spare parts must be guaranteed for a period of 10 years. In case of discontinuation of the equipment, you have to intimate us in advance.
10. **AFTER SALE SERVICE :** It must be clearly indicated in the quotation whether the after sales service would be provided. by supplier himself or by their authorized agent after satisfactory installation/commissioning of equipment.



11. **INDIAN AGENTS :-**

(a) **Authorized Agent Certificate of his principal must be submitted by Indian Agent along with his quotation, failing which the quotation shall not be considered. (Format enclosed)**

(b) **The Indian Agents Commission must be declared by the Foreign Supplier /Indian Agent in the quotation which will be paid in Indian Currency after satisfactory installation & commissioning / functioning of the equipment.**

13 **FOREIGN SUPPLIER :- Foreign supplier / manufacturer are required to submit their quotation directly to C.E.E.R.I. with in due date and time. In case foreign supplier / manufacturer are willing to submit their quotation through his authorized agent in India, The Indian Agent can submit his quotation along with Foreign Supplier authorization Certificate**

14. **PAYMENTS :- A. FOR IMPORTS :**

**Through Letter of Credit :-** L/C will be opened for 100% FOB value after receipt of acceptance of order from the successful tenderer along with performance bank guarantee for 10% amount of order value valid up to expiry of warranty period plus 2 months. The 90% amount of L/C shall be released on presentation of complete shipping documents. Balance 10% of order value shall be released after satisfactory installation and commissioning of the equipment.

**BANK CHARGES :-** The bank charges out side India will be to the account of Supplier

**B. FOR INDIGENEOUS :** The payment will be made against bill only after supply of goods in good working conditions and satisfactory installation/commissioning and performance of the equipment at CEERI and after acceptance certification by our technical expert/scientist. However, supplier will be required to submit performance bank guarantee for 10% amount of the total value of order along with acceptance of our order valid up to expiry of warranty period. In case of non fulfilling the commitments the Bank Guarantee will be forfeited.

**C. No advance payment will be made to any supplier**

15 **TRAINING :-**

**15.1** Vendor shall provide one week equipment training for two CEERI persons at their site before dispatching the equipment **FREE OF COST.**

**15.2** Vendor shall provide 3-5 days training for two CEERI Scientists/Technical personnel at CEERI after installation & commissioning of the equipment FREE OF COST.

**16 INSPECTION :-** The consignment shall be opened in the presence of firm's representative and inspection of the system will be done by our technical expert /scientist in the presence of firms representative at CEERI. In case firms representative is not available, the inspection will be done by CEERI. The discrepancies will be intimated to supplier accordingly. All short supplies will be arranged by supplier on FOR/CIF CEERI basis. In case of receipt of the material in damaged or defective condition the supplier will have to arrange the replacement of goods free of cost pending the settlement of the insurance case wherever applicable.

**17 EMD :-** EMD of Rs. 3,00,000/- OR equivalent in respective Foreign Currency TOWARDS EARNEST MONEY IN THE FORM OF BANK GUARANTEE /DEMAND DRAFT/ BANKERS CHEQUE valid for Six months plus 45 days from the date of opening of the tender must be submitted along with quotation (techno-commercial quotation in case of two bid system), otherwise quotation will not be considered. The firms, if registered with DGS&D, NSIC, Govt. Public Undertakings, Central Autonomous Bodies and with CSIR Labs. / Institutes for supply of the same item for which the party is submitting the quotation, will be exempted from submission of EMD. These parties will have to submit registration certificate along with their quotations. EMD of the un-successful bidders shall be refunded at the earliest after finalizing the purchase of the concerned item. The parties must, therefore, submit a pre-receipted Receipt along with quotation to enable us to refund their EMD. In case the tender is failed to accept our order or failed to execute our order the EMD will be forfeited. BID(S) NOT ACCOMPANIED WITH AN EMD IS /ARE LIABLE TO BE REJECTED.

**18 PENALTY :-** In case the delivery of goods is not made on or before the prescribed date of delivery or the installation and commissioning is not completed within stipulated period by the supplier a penalty @ 0.5% per day of order value will be charged to a maximum of 5% from the successful tenderer.

**19 PERFORMANCE SECURITY :-** An unconditional performance bank guarantee from scheduled bank for 10% amount of order value has to be furnished by successful tenderer along with acceptance of our order towards the performance security within 21 days of the placement of order failing which the order shall be deemed as terminated. The bank guarantee must be valid up to delivery period and installation & commissioning period warranty period plus 2 months. In case of any breach of contract the bank guarantee will be forfeited.

**20. DELETION OF NAMES OF DEFAULTING PARTIES:-** Names of parties 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 the party. Those firms have already been Black listed by CSIR / Govt. of India, need not apply /quote.

**21. UNSOLICITED QUOTATION/LATE QUOTATION:-** Unsolicited quotation/incomplete quotations / late or delayed tenders shall not be considered at all. Post tender revision/corrections shall also render their tender liable for rejection. It is the responsibility of the bidder to ensure that the bid complete in all respect is received in CEERI before the last date of receipt of tenders. CEERI will not be responsible for the loss/delay in transit of any bid.

**22 COMPLIANCE STATEMENT :-** Tenderers are required to furnish a compliance statement of each and every specification of our tender supported by the technical literature/leaflet in the following format, preferably giving the price of each of the specification or part/accessories of the equipment required to be quoted. The deviations, if any from the tendered specifications should be clearly brought out in the statement. Similarly, the compliance of each of the required terms and conditions of the tender may also be stated in the form of a separate compliance statement along with quotation (with techno commercial bid in case of two bid system). Deviations may be given in separate column.

The firms are advised to submit both the compliance statements essentially along with their quotation failing which their offer will be treated incomplete and can be ignored. It must be certified that the quoted equipment is of latest technology.

**FORMAT OF COMPLIANCE STATEMENT OF SPECIFICATIONS**

S. No.	Name of Specifications/ part/ Accessories of tender enquiry	Specifications of quoted Model / Item	Compliance Whether “YES” OR “NOT”	Deviation, if any to be indicated in un-ambiguous terms
1	2	3	4	5

## FORMAT OF COMPLIANCE STATEMENT OF TERMS & CONDITIONS

Tender Terms and Conditions	Whether acceptable or not	Deviation from Tender Terms, if any
1	2	3

**23 FORCE MAJEURE:-** Neither of the Parties hereto shall be liable for damage or have the right cancel for any delay or default in performing it's control including but not limited to Fire, Storm, Floods, Earthquakes, acts of God, Government restriction, continuing domestic or international problems (such as wars, rebellion, insurrections, strikes, riots, work stoppages, labour dispute) or delay as to ancillary materials, which affect the dates of fulfillment of any obligations as per the Purchase Order. Such dates will be respectively postponed for the period of continuance of such force majeure circumstances and the other party can suspend the performance of it's obligations correlated to the postponed obligation of the effected party.

The obligation thus postponed shall be resumed after the force majeure circumstances have ceased. At the beginning, during and at the pre-visible end of the force majeure circumstances the parties shall promptly consult with each other about appropriate counter measures to be taken. If the performance of obligations of any party should be delayed more than six (06) months by reasons of force majeure circumstances mentioned above, the parties shall mutually consult about subsequent performance of obligations.

24 **CANCELLATION OF ORDER :-** In the event of vendor's failure to execute the order as per terms and conditions mentioned therein. CEERI reserves the right to cancel the Purchase Order without any obligation. The Bidder may also specify obligations if CEERI decides to cancel the Purchase Order for reasons attributable to CEERI.

25 **EVALUATION OF TENDER :-**

- (a) One the due date the Technical bids will be opened and referred to the Technical Committee which is duly constituted by the Director, CEERI.
- (b) The information received and the bids already submitted together will be examined with reference to the tendered specifications and evaluation is made by the Technical Committee.

- (c) After the technical evaluation is completed and approved, CEERI shall inform to the bidders whose tenders have been rejected technically with the reasons for rejection.

**The commercial offers of the vendors whose technical offers are found to be technically deficient or do not meet the qualification criteria as specified in this tender will be returned to them without opening.**

- 26 The successful bidders will be informed regarding the date and time of commercial bid opening.
- 27 The purpose of obtaining two bids (technical and commercial ) is to evaluate all the firms on technical basis with reference to the tendered specifications, performance of similar Solutions/Applications elsewhere, obtaining user's views with reference to the earlier supplies. This will enable the technical committee to arrive at a fair recommendation in the interest of the organization.
- 28 In the event of seeking any clarification from various bidders by CEERI, the bidders are required to furnish only technical clarifications that are asked for. No amendment to commercial bid will be entertained at that stage. In case if a bidder fails to quote for a particular item it amounts to non-compliance and hence such bid will not be considered for further evaluation. Further during this process if any bidder indicates the price during the clarification such bids also will not be considered for further evaluation.
29. **ARBITRATION:-** All disputes or differences arising under and out of, or in connection with the contract, if concluded, shall be referred to the sole arbitration by an arbitrator appointed under the provisions of Indian Arbitration Act. 1940 by CSIR/CEERI. The same shall be binding on both the parties.
30. **ACCEPTANCE OF OFFER :-** The Director, CEERI reserves the right to accept or reject any quotation / tender in part or full without assigning any reason thereof. No interim inquiries will be attended to.
31. **FALL CLAUSE :-** The supplier shall certify that if the prices go downwards before execution of our order than the quoted prices, the benefit in this situation shall be allowed to CEERI/CSIR by the supplier. The supplier shall certify that the equipment material shall not be supplied to anyone less than the contract price during the period of execution of CEERI/CSIR order.

STORES & PURCHAE OFFICER

**SCHEDULE OF REQUIREMENT Chapter - 3**

Tender No. 726/NWP-51/SNG/10-Pur/2009/T-03

Date : 16.4.2010

Last Date & Time for receipt of Tenders 26.5.2010 at 2.30 PM

Date & Time of Opening 26.5.2010 at 3.30 PM

<b>Sl. No.</b>	<b>Description of Stores</b>	<b>Qty.</b>
1.	<p style="text-align: center;"><b>Plasma enhanced CVD system for deposition of thin films of nanostructured-silicon with in-situ doping, SiO<sub>2</sub>, Si<sub>3</sub>N<sub>4</sub>, Silicon Oxy-nitride.</b></p> <p style="text-align: center;"><b>(Detailed specifications as per attached sheet )</b></p>	1 No.

STORES & PURCHASE OFFICER

## Specifications of Plasma Enhanced CVD System

### 1.0. **General:**

Plasma Enhanced Chemical Vapor Deposition equipment for deposition of thin films of nano-structured silicon with in-situ doping, silicon dioxide, silicon nitride, silicon oxy-nitride.

### 2.0. **Process: Plasma Enhanced Chemical Vapor Deposition**

3.0. **Deposition:** Thin films of nano-structured silicon with in-situ doping, silicon dioxide, silicon nitride, silicon oxy-nitride.

3.1. **Thickness:** 50 Å - 20000 Å

3.2. **Uniformity:** ± 5% over 2" or larger wafer

3.3. **Process time control precision:** 1 Second or below

3.4. **Run to run process repeatability:** ± 2-3%

### 4.0. **Process Temperature**

4.1. **PID Temperature controller** with digital display, compatible heating and sensing mechanism.

4.2. **Deposition Temperature:** ≥ 500°C.

4.3. **Temperature control accuracy:** ± 2°C.

### 5.0. **Vacuum System:**

5.1. **Base pressure** = 10<sup>-6</sup> Torr or better

5.2. **Process pressure range:** 0.1 (or lower) Torr – 2 Torr

5.3. **Pressure control resolution** = 10 mTorr or lower

5.4. **Automatic throttle Valve** for precise pressure control (make - MKS)

5.5. **Vacuum Pumping system;** Turbo molecular pumping system with dry pump (make - Alcatel, Edwards, Leybold, Pfeiffer, Balzers, EBARA, Varian)

5.6. **Pressure digital display.**

5.7. **Vendor to specify pressure sensing elements and their make** (make: Pirani & Penning gauges - Varian, GP/MKS/MDC, Capacitance Manometer - Pfeiffer, MKS, TYLAN GENERAL.)

5.8. **Gate Valve;** VAF make or equivalent.

### 6.0. **RF Plasma Generator (Complete):**

6.1. **Frequency:** 13.56 MHz

6.2. **Power:** 300W or above

6.3. **Automatic power tuning**

6.4. **Precision power control:** 1W

6.5. **Digital Display** for applied and reflected power

6.6. **Make:** MKS/DRESSLER

### 7.0. **Process Chamber with view port:**

7.1. **Material:** SS 316

7.2. **Cooled RF powered top electrode with shower head**

7.3. **Wafer size:** 2" or larger and pieces.

7.4. **Wafer/pieces position** during process: Horizontal.

7.5. **Susceptor material compatible** with process gases.

- 7.6. Maximum allowable leak rate:  $10^{-9}$  mbar lit./sec for He.
- 7.7. Substrate plasma cleaning prior to deposition.
- 7.8. Gas cleaning of chamber after deposition.
  
- 8.0. Process gases and mass flow controllers:
  - 8.1. Mass Flow Controllers (MFCs): 10 Nos., Provision for extra 2 Nos. (Make MKS/UNIT/ TYLAN)  
MFCs Calibrated for  $\text{SiH}_4$ ,  $\text{N}_2\text{O}$ ,  $\text{GeH}_4$ ,  $\text{B}_2\text{H}_6$ ,  $\text{PH}_3$ ,  $\text{N}_2$ ,  $\text{H}_2$ ,  $\text{C}_2\text{H}_2$ .
  - 8.2. Tubing: SS316L- electro-polished with VCR fittings, leak tested to  $10^{-9}$  mbar lit./sec He
  - 8.3. Micro-filters (0.3  $\mu\text{m}$ ) and check valves on each line with bye pass assembly.
  
- 9.0. Interlocking system:
  - Extraction flow, water flow, chamber door close, emergency stop, communication loss, process stop etc.
  
- 10.0. Control System:
  - 10.1. Manual and automatic process executions.
  - 10.2. Window based software for system and process control.
  - 10.3. TFT/LCD Monitor ( $\geq 17''$ )
  
- 11.0. Documentation (English):
  - 11.1. Vendor to provide complete clean room compatible documentation/manual softcopies/hard Copies for the system.
  - 11.2. Installation manual
  - 11.3. Operation manual
  - 11.4. Maintenance Manual-Complete.
  - 11.5. Documentation/manuals shall include all drawings/schematics, spares parts catalogues and also sub-vendors manuals.
  
- 12.0. Support & Maintenance:
  - 12.1. Maintenance kit (with details)
  - 12.2. Vendor shall commit to provide spares and support for 10 years after expiry of warranty period.
  - 12.3. Vendor shall provide necessary spares for three years at the time of delivery of the system.
  - 12.4. Guarantee for AMC for maintenance support after warranty period.
  
- 13.0. Warranty:
  - 13.1. Standard one year warranty for the system from the date of installation and commissioning of the system.
  - 13.2. Only reputed original equipment manufacturers (OEM) of international standard should submit the tender. The system being supplied should meet European/USA semiconductor standards quality.
  - 13.3. Vendor shall provide list of customers along with complete addresses where similar systems are installed.



**18.0. Utility:**

Vendor shall provide details of all the utilities/facilities such as power, running load, pressure & flow rates of compressed air, process gases, cooling water, and safety etc. requirements along with size & type of fittings.

**18.1. Available power supply: 415 ± 20 Volts, 50 Hertz, 3 Phase A.C.**

**18.2. Installation and commissioning:**

Vendor shall install and commission the equipment at CEERI, Pilani within one month after receiving of the equipment at CEERI.

**18.3. Process demonstration:**

Vendor shall demonstrate the operation of the equipment and carryout process for deposition of films as per item no.3 to the user satisfaction at CEERI.

**18.4. Equipment training:**

18.1. Vendor shall provide one week equipment training for two CEERI persons at his site before dispatching the equipment at vendor's cost.

18.2. Vendor shall train two Scientists/ Technical personnel for 3-5 days at CEERI after installation & commissioning of the equipment at vendor's cost.

**19.0. Optional Items:**

1. System capability to grow silicon nanowires and CNTs
2. Variable low frequency (KHz) Plasma generator
3. Wafer rotation
4. Real time process video monitoring
5. Compatible chiller (JULABO or equivalent).
6. In-situ thickness monitor.
7. Complete load lock system:
  - 7.1. Load lock for full wafer/pieces
  - 7.2. Easy transport mechanism for wafer from load lock chamber to the process chamber and vice versa
  - 7.3. Design of system should allow loading *through* load lock as well as manual to the chamber
8. Gas cabinets for process gases
9. Scrubber system for toxic gases
10. Spare parts as suggested by vendor
11. Up-gradation to 4-6" wafer size
12. Susceptor for single/multiple wafers
13. Variable inter-electrode gap in the range of 2-5 cm
14. Provision for deposition at high pressure.

## PRICE SCHEDULE FOR GOODS BEING OFFERED FROM ABROAD

Name of the Bidder \_\_\_\_\_

Tender No. ....

1.	2.	3.	4.	5.	6.		7.		8.		9.
S. No.	Item Description	Country of origin	Unit	Qty.,	Unit Price		Total Price (5 x 6)		Charges for Insurance and transportation to port/ place of destination		Total price (7 +8)
					FOB (named port of shipment)	FCA (names place of delivery)	FOB (named port of shipment)	FCA (names place of delivery)	Ocean	Air	CIF

Total Bid price in foreign currency ..... in words.

Note :-

- (a) Indian Agents name and address \_\_\_\_\_
- (b) Installation, commissioning & training charges, if any \_\_\_\_\_
- (c) Cost of Spares \_\_\_\_\_  
Address \_\_\_\_\_
- (d) The Indian agent's commission shall be paid in Indian Rupees only based on the Exchange rate prevailing on the date of negotiation of documents in accordance with clause 22.1 of GCC
- (e) The cost of optional items shall be indicated separately.
- (f) Packing Charges \_\_\_\_\_
- (g) Forwarding Charges \_\_\_\_\_
- (h) Sales Tax \_\_\_\_\_
- (i) Excise Duty \_\_\_\_\_
- (j) Freight Charges \_\_\_\_\_
- (k) Insurance Charges \_\_\_\_\_
- (l) Validity of Quotation \_\_\_\_\_
- (m) Delivery Period \_\_\_\_\_

- (n) Mode of Delivery /Shipment \_\_\_\_\_
- (o) Guarantee/Warranty \_\_\_\_\_
- (p) Sale Service after Warranty \_\_\_\_\_
- (q) Payment \_\_\_\_\_
- (r) Inspection \_\_\_\_\_
- (s) Training \_\_\_\_\_
- (t) Penalty \_\_\_\_\_
- (u) Performance Security \_\_\_\_\_
- (v) Compliance Statement \_\_\_\_\_
- (w) User's List \_\_\_\_\_

Signature of Bidder  
Name  
Business

Address :  
Telephone :

**PRICE SCHEDULE FOR GOODS BEING OFFERED FROM INDIA**

Name of the Bidder \_\_\_\_\_

Tender No. \_\_\_\_\_

1.	2	3	4	5	6	7	8	9	10	11
Sl. No.	Item Description	Country of origin	Unit	Quantity	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) 5 x 6	VAT & other taxes like excise duty payable, if contract is awarded	Packing & forwarding up-to station of dispatch	Charges for inland transportation, insurance to ultimate destination i.e. CEERI, Pilani	Installation Commissioning and training charges, if any

Total Bid price in foreign currency in words \_\_\_\_\_

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

Name \_\_\_\_\_

Business Address \_\_\_\_\_

**Note :**

(a) AMC charge per annum \_\_\_\_\_

## **Qualification Requirements Chapter - 5**

1. The Bidder should be a manufacturer/authorized representative of a manufacturer who must have designed, manufactured, tested and supplied the equipment(s) similar to the type specified in the “Technical Specification”. Such equipments must be of the most recent series/models incorporating the latest improvements in design. The models should be in successful operation for at least one year as on date of Bid Opening.
2. The Bidder should furnish the information on past supplies and satisfactory performance .
5. That adequate and specialized expertise is already available or will be made available following the execution of the contract in the Purchaser’s country, to ensure that the support services are responsive and adequate.
6. The Indian Agents of foreign manufacturers / suppliers quoting directly on behalf of their principals for items appearing in the restricted list of the current EXIM policy of the Govt. of India are registered with DGS&D.
7. To maintain sanctity of tendering system one Indian Agent cannot represent two different foreign principals in one tender.
8. The bidder must Certify that the quoted equipment is of latest model.
9. The bidder shall furnish documentary evidence to demonstrate that the goods it offers meet the usages requirement as per CEERI specifications.
10. The bidder shall furnish documentary evidence of their financial capability as follows :-
  - (i ) Annual turnover for each of the preceding two years.

## Chapter – 6

### Contract Form

Contract No. ....

Date .....

THIS CONTRACT AGREEMENT is mad

The ( insert : number ) day of ( insert : month ) ( insert : year )

BETWEEN

1. The Council of Scientific & Industrial Research registered under the Societies Registration Act 1860 of the Government of India having its registered office at 2, Rafi Marg, New Delhi – 110 001, India represented by the Director, Central Electronics Engineering Research Institute, Pilani – 333 031 (Rajasthan), India (hereinafter called “the Purchaser”, which expression, where the context admits, shall include its successors), and
2. (insert name of Supplier ), a corporation incorporated under the laws of (insert : country of Supplier ) and having its principal place of business at (insert : address of Supplier ) ( hereinafter called “the Supplier”, which expression, where the context admits, shall include its successors, assigns and nominees).

WHEREAS the Purchaser invited bids for certain Goods and ancillary services, viz., (insert brief description of Goods and Services ) and has accepted a Bid by the Supplier for the supply of those Goods and Services in the sum of (insert Contract Price in words and figures, expressed in the Contract currency(ies) ) (hereinafter called “the Contract Price”).

NOW THE AGREEMENT WITNESSETH AS FOLLOWS :

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the Conditions of Contract referred to .
2. The following documents shall constitute the Contract between the Purchaser and the Supplier, and each shall be read and construed as an integral part of the Contract :

- (a) The Contract Agreement
  - (b) Special Conditions of Contract
  - (c) General Conditions of Contract.
  - (d) Technical Requirements (including Schedule of Requirements and Technical Specifications)
  - (e) The Supplier's Bid and original Price Schedules
  - (f) The Purchaser's Notification of Award
  - (g) (Add here any other document(s) )
3. The Contract shall prevail over all other Contract documents. In the event of any discrepancy or inconsistency within the Contract documents, then the documents shall prevail in the order listed above.
4. In consideration of the payments to be made by the Purchaser to the Supplier as hereinafter mentioned, the Supplier hereby covenants with the Purchaser to provide the Goods and Services and to remedy defects therein in conformity in all respects with the provisions of the Contract.
5. The Purchaser hereby covenants to pay the supplier in consideration of the provision of the Goods and Services and the remedying of defects therein, the Contract Price of such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract.

IN WITNESS whereof the parties hereto have caused this Agreement to be executed in accordance with the laws of Union of India on the day, month and year indicated above.

For and behalf of the Council of Scientific & Industrial Research

Signed : (insert signature)

In the capacity of (insert title or other appropriate designation)

In the presence of (insert identification of official witness )

Signed : (Insert signature)

In the capacity of (Insert title or other appropriate designation )

In the presence of (insert identification of official witness)

For and on behalf of the Supplier

Signed : (insert signature of authorized representative(s) of the Supplier)

In the capacity of (insert title or other appropriate designation )

In the presence of (insert identification of official witness )

## Chapter - 7

# LETTER OF QUOTATION

Quotation No. .

Quotation For:-

To

The Director  
CEERI  
Pilani (Raj.) 333 031

Sir,

I/We the undersigned hereby offer to supply “  
\_\_\_\_\_” at the rates stated in the attached Schedule  
(Annexure-I). I/We have carefully gone through and have understood the instructions as contained in the invitation to quote and instructions to Contractors and the Specifications/Drawings enclosed therewith and agree to be bound by the provisions contained therein.

2. I/We agree to hold this offer open up to \_\_\_\_\_ and not to withdraw, amend or modify the same during the said period. I/We shall be bound by a communication of acceptance dispatched within the prescribed time. The Earnest Money in the form of Bank Guarantee for Rs. \_\_\_\_\_ in favour of Director, CEERI is enclosed herewith. I/We have understood that the quotation documents have been issued to me/us and I/We am/are permitted to quote in consideration of the stipulation on my/or our part after submitting the quotation. I/We will not resite from this offer or modify the terms and conditions thereof till \_\_\_\_\_; In case I/We fail to observe to comply with the foregoing stipulation, the Earnest Money shall be forfeited to the CEERI.

3. I/We agree that in the event of failure on my/our part to commence the work under the contract, if awarded, within 15 days from the date of receipt of contract, the Earnest Money shall be forfeited to the Government without prejudice to either rights of the Government under the Contract.

4. The copy of the Specifications/Drawings and all other related documents received alongwith the invitation to quote and Instructions to Contractors are returned herewith duly signed and stamped as a token of acceptance.

Thanking you,

Yours sincerely

Signature of the tenderer and the  
capacity in which he signs i.e. sole  
proprietor etc.

Date:

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

Telegraphic Address \_\_\_\_\_



## (TECHNO-COMMERCIAL BID)

1. Schedule to Tender No. :
2. Name of the Tenderer :
3. Time & Date of Receipt of Tender :
4. Opening of the Techno Commercial Bid. :
5. The tender shall remain valid for acceptance for 120 days from the date of opening of the tender

S. No.	Description of stores	Qty.	Place & Date by which delivery is to be made

### TERMS & CONDITIONS :

1	EMD in the form of Bank Guarantee for Rs _____ in favour of Director, CEERI, Pilani (Raj.)	
2.	Packing	
3.	Forwarding	
4.	Sales Tax	
5.	Excise Duty	
6.	Installation & Commissioning	
7.	Freight	
8.	Insurance	
9.	Validity of quotation	
10.	Delivery Period	
11.	Mode of Delivery/Shipment	
12.	Guarantee/Warranty	
13.	Spare Parts	
14.	After Sale Service	
15.	Indian Agent's Commission	
16.	Payment	
17.	Inspection	
18.	Training	
19.	Penalty	
20.	Performance Security	
21.	Compliance Statement	
22.	User's List.	

STATION:

DATE:

(Signature of the Supplier with  
Office Stamp).

Address:  
Tel. Address

## 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 are 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 warranty clause of the conditions of the 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)

**MODEL BANK GUARANTEE FORMAT FOR FURNISHING BID SECURITY EMD)**

Whereas .....(hereinafter called the “tenders”) has submitted their offer dated ..... for the supply of (hereinafter called the “tender”) against the Purchaser’s tender enquiry No. .... KNOW ALL MEN by these presents that WE .....of .....having our registered office at ..... are bound unto .....(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 THIS OBLIGATION ARE :**

- (1) If the tenderer withdraws or amends, impairs or derogates from the tender in any respect within the period of validity of this tender.
  
- (2) If the tenderer having been notified of the acceptance of his tender by the Purchaser during the period of its validity :-
  - (a) If the tenderer fails to furnish the performance security for the due performance of the contract.
  - (b) 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 (CSIR/CEERI) having to substantiate its demand, provided that in its demand the purchaser will note that the amount claimed by it is due to it owing the occurrence of one or both the two conditions, specifying the occurred condition or conditions. This guarantee will remain in force up-to and including 45 days after t he period of tender 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 and address of the Bank and address of the Branch.