Central Glass & Ceramic Research Institute
KOLKATA (WEST BENGAL) INDIA

CORRIGENDUM

REFERENCE NO. :-P/NC/96/SB/AB/OTE/21-22 DATE: 23/11/2021

NAME OF EQUIPMENT: PLASMA ENHANCED CHEMICAL VAPOUR DEPOSITION (PECVD) EQUIPMENT

NOTE: THE BIDS MUST BE SUBMITTED IN THE CENTRAL PUBLIC PROCUREMENTPORTAL (URL:HTTPS://ETENDERS.GOV.IN/EPROCURE/APP) ONLY. MANUAL/OFFLINEBIDS SHALL NOT BE ACCEPTED UNDER ANY CIRCUMSTANCES.

CONSEQUENT TO THE PRE-BID MEETING HELD ON 15/11/2021, THE REVISED SPECIFICATION OF "PLASMA ENHANCED CHEMICAL VAPOUR DEPOSITION (PECVD) EQUIPMENT" IS GIVEN OVERLEAF:

E-PROCUREMENT ON OPEN TENDER TO BE QUOTED IN INR ONLY
(RESERVED FOR LOCAL SUPPLIERS AS PER MAKE ININDIA POLICY)

Annexure B:

Specifications of Plasma Enhanced Chemical Vapour Deposition (PECVD) Equipment

Sl. No.	Description	Quantity
1	**Vacuum chamber** (MOC : SS 316) for housing 1"x1" sample holder with substrate heating and suitable design for water cooling (chiller not in the scope of supply). The chamber should have ports for pump, vacuum gauge, viewing, RF electrode, gas ring, gas inlet etc mounted on frame. The acceptable maximum leak rate for the chamber is $1x10^{-9}$ mbar.liter/sec	1 unit
2	**Sample holder with substrate heater** (heating element to be enclosed for protection against gases/vapours) to max 600 deg C with PID programmable controller for temperature control	1 unit
3	**Vacuum System :** (a) For evacuating the vacuum chamber (item 1) to a minimum vacuum level of $1x10^{-6}$ mbar, the vacuum system should comprise a turbo pump of minimum pumping capacity of 50 liter/sec, backed by rotary backing pump for handling corrosive gases/vapours with minimum pumping capacity of 9 m^3/hr. Make of the vacuum pumps (turbo & rotary) may be Pfeiffer/Leybold/Edwards or substantially equivalent. (b) Pirani gauge, cold cathode (penning) gauge and capacitance manometer 0 to 10 torr (1 no. each). (c) Vacuum manifold, motorised gate valve, throttle valve and required vacuum accessories to be provided	1 Set
4	**Radio Frequency (RF) Power Supply System :** (a) RF Generator with auto matching network. Frequency: 13.56 MHz and Power : 300 W (minimum). Make : Barthel / Seren / Advanced Energy or substantially equivalent. – 1 No. (b) RF electrode of minimum 2 inch diameter which can be manually moved vertically up and down up to 50 mm – 1 No.	1 set
5	**Gas Handling System :** (a) Pneumatic valve for Argon purging of the chamber after evacuation – 1 No. (b) Digital mass flow controllers (Make : Alicat/MKS or substantially equivalent for gas flow rate 0 to 100 SCCM for standard gases (e.g., Ar, N_2, O_2) – 2 Nos. (c) SS 316 100ml bubblers with diaphragm valves on both ends, heated jacket and PID controller for max 150 deg C – 1 No.	1 set
6	**System Control / Automation :** PC / HMI based control interface with software for controlling the entire process sequence except for loading and unloading of sample. The PC from reputed brand should have Intel Core i5 CPU, 8 GB RAM and 1 TB HDD, Gigabit Ethernet card, 4 nos. USB 3.0 interface, keyboard, mouse and 19" monitor, Windows 10 OS (preloaded).	1 set
7	**Operating and maintenance manual**	1 set

Note :

(a) The input power supply : 210-230V @ 50 Hz

(b) Acceptance test : The bidder should provide certified test report of leak rate of the vacuum chamber, performed at factory, before supplying the PECVD equipment. After delivery and installation, the bidder has to demonstrate, at CSIR-CGCRI, deposition of thin film of tin oxide (SnO_2) (precursor to be provided by CSIR-CGCRI) on 10 mm x 10 mm area, within a 25 mm x 25 mm silicon wafer, with uniformity of thickness not exceeding ± 10%.

(c) 100% payment will be made after successful delivery, installation, commissioning, trailing and passing the above acceptance test.