



CSIR-CENTRAL GLASS AND CERAMIC RESEARCH INSTITUTE
[COUNCIL OF SCIENTIFIC & INDUSTRIAL RESEARCH, CSIR]
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PURCHASE ORDER

M/s. SG Controls Limited, Newton Hall, Newton, Cambridge, CB 22 7ZE Email – info@newtonhall.co.uk	P.O. No.	P/NC/91/SD/DB/GTE/22-23
	Date	16/03/2024
	Subject	Purchase Order

References:-

1. Our Enquiry bearing No. : P/NC/91/SD/DB/GTE/22-23 Dt. 09/01/2024.
2. Your Bid Ref. No: QP23044/1 Dated 05.02.2024.
3. Your email dt. 14/02/2024.
4. Your email dt. 21/02/2024.
5. Your email dt. 27/02/2024.
6. Your email dt. 13/03/2024.

Dear Sir,

I am directed to request you to kindly supply, installation, commissioning & training the following material as the enclosed terms & conditions:-

Sl. No.	Description of goods	Quantity	Total Price/ GBP
1.	MCVD Preform Manufacturing System HSN Code: 8475 21 00 Detailed Specification is given in Annexure-I	01 No.	5,70,000.00
FOB UK International Seaport			5,70,000.00
Installation & Commissioning Charges			Included
Demonstration & Training Charges			Included
Total FOB UK International Seaport including Installation, Commissioning, Demonstration & Training			5,70,000.00

The Specifications of the goods and other services shall strictly conform to those laid down in your Technical Bid No. QP23044/1 Dated 05.02.2024 and your subsequent communications through email dt. 14/02/2024, 21/02/2024, 27/02/2024, 13/03/2024.

This Contract/Purchase Order shall be governed by:-

- (1) General Conditions of Contract and Special Conditions of Contract as detailed in the Bid Document and
- (2) Special Conditions of Contract enclosed with this Purchase Order.

It is requested that the Order Acknowledgement may kindly be made available to us, in order to enable us to establish an irrevocable Letter of Credit of GBP 5,70,000.00 (GBP Five Lakhs Seventy Thousand only) being 100% (Hundred Percent) of Purchase Order value in your favour out of which payment shall be released in the following ways:-

- a) **On Shipment:** Seventy percent (70%) of the contract value of Goods shipped shall be paid through irrevocable letter of credit opened in favour of the Supplier in a bank in its country, upon submission of shipment documents.
- b) **On Acceptance:** Thirty percent (30%) of the contract value of Goods shall be paid through Irrevocable LC after successful installation, commissioning, demonstration and training including completion of all contractual obligations upon submission of claim supported by the acceptance certificate issued by the Purchaser along with the Performance security including fulfillment of all contractual obligations subject to the submission of PBG @ 5% of the order value covering the period beyond 02 months of the Warranty Period of 1 year.

The Order Acknowledgement must be submitted immediately and in any case, within 07 days from the date of placement of this Purchase Order.

You are requested to return the duplicate copy of this Purchase Order, duly signed and stamped, as a token of your acceptance to this order.

Yours faithfully,



(Anjani Kr. Pandey)

Stores & Purchase Officer

For & on behalf of the Council of Scientific & Industrial Research

Enclo:

1. Terms & Conditions.
2. Annexure I (Technical Specifications).
3. Format for Performance Bank Guarantee.
4. Format for Acceptance Certificate
5. Format for No Form.

अंजनी कुमार पाण्डेय / Anjani Kumar Pandey
मण्डार एवं क्रय अधिकारी / Stores & Purchase Officer
सीएसआईआर-केन्द्रीय काँच एवं सिरामिक अनुसंधान संस्था-
CSIR-CENTRAL GLASS & CERAMIC RESEARCH INSTITUTE
198, राजा एस. सी. मुल्लिक रोड / 198, Raja S.C. Mullick Road
कोलकाता / Kolkata-700 032

Explanations

The following words and expressions used in this Tender Document shall have the meanings hereby assigned to them:

Purchaser	means CSIR-CENTRAL GLASS & CERAMIC RESEARCH INSTITUTE, 196 RAJA S.C. MULLICK ROAD, KOLKATA 700 032, INDIA.
Manufacturer/Supplier	means M/s. SG Controls Limited, Newton Hall, Newton, Cambridge, CB 22 7ZE
Indian Agent	No Indian Agent present.

1.	Delivery Term	FOB UK International Seaport
2.	Purchase Order Value / Contract Price	GBP 5,70,000.00 (GBP Five Lakhs Seventy Thousand only) on FOB UK International Seaport.
3.	Transportation / Despatch	<p>The ordered goods shall be shipped on "Freight to pay" basis through its nominated Freight Forwarder in UK. The details of Buyer's Freight Forwarder in UK are given below:</p> <p style="text-align: center;">EMS CARGO LIMITED, ASHFORD HOUSE, 41-45 CHURCH ROAD, ASHFORD, MIDDLESEX TW15 2TQ U.K. Ctc : Lana Nicholls. London Heathrow. Direct Line +44 (0) 1784 279306 Tel: +44 (0) 1784 422004 Fax: +44 (0) 161 499 0847 Email: lanan@ems-cargo.co.uk</p>
4.	Payment	<p><u>Payment shall be made in currency of the Contract in the following manner:</u></p> <p>An irrevocable Letter of Credit in GBP for 100% of Order Value shall be established in favour of Supplier, out of which payment shall be released in the following ways.</p> <p>(a) On Shipment: Seventy percent (70 %) of the contract price of Goods shipped shall be paid through irrevocable letter of credit opened in favour of the Supplier in a bank in its country, upon submission of shipment documents.</p> <p>(b) On Acceptance: Thirty percent (30 %) of the contract price of Goods shall be paid through Irrevocable LC after successful installation, commissioning, demonstration and training including completion of all contractual obligations upon submission of claim supported by the acceptance certificate issued by the Purchaser along with the Performance security including fulfillment of all contractual obligations subject to the submission of PBG @ 05% of the order value covering the period beyond 02 months of the Warranty Period of 1 year.</p>
5.	Banking Charges	All bank charges abroad shall be to the account of the beneficiary i.e. supplier and all bank charges in India shall be to the account of the purchaser.
6.	Performance Security	To be submitted @ 5% of PO value after completion of installation & commissioning which shall be valid for Warranty Period + 60 days.
7.	Country of Origin	UK
8.	Port of Shipment	Any UK International Seaport.
9.	Customs Duty Exemption Certificate (CDEC)	CDEC for imported equipment will be provided by CSIR-CGCRI.
10.	Delivery period	The Supplier shall ship the consignment within 12 months from the date of establishment of the irrevocable Letter of Credit.
11.	Warranty	1 (One) Year comprehensive warranty from the date of completion of successful Installation, Commissioning, Training and completion of all contractual obligations to the entire satisfaction of this Institute (Purchaser).

12.	Insurance	The Insurance in respect of goods to cover all risks upto final destination shall be borne by Purchaser at its own costs.
13.	Installation & Commissioning	<p>Installation, commissioning and demonstration of the equipment will be initiated by the firm's engineers including acceptance test at site from the date of intimation by CSIR-CGCRI as per following schedule.</p> <p><u>The installation/commissioning/demonstration will be done by the supplier in several different phases as mentioned below:</u></p> <ol style="list-style-type: none"> 1. Phase 1 is the unpacking, siting and reattachment of items removed for transit. Typically this will take 1 week. 2. Phase 2 can then commence where the machine will be made available for the Purchasers contractors to make the service connections to the machine. Given that this can involve high purity pipework for multiple gases and leak checking Phase 2 service hookup can take 1-2 weeks typically assuming the purchasers contractors are available to start immediately. 3. Phase 3 commences after service connections are made and involves basic tests of functionality followed by a period of purging with N₂ to dry down the system which is a prerequisite before any filling with live chemicals can take place. The drying process cannot be accelerated and takes a minimum of 1 week. 4. Phase 4 involves the introduction of live process gases and the filling of the bubblers with the high purity reactive chemicals after which commission test are undertaken. Phase 4 can take 1 week. 5. Phase 5 involves running process to calibrate the system followed by the undertaking of demonstration tests. Fabrication of any preform will typically take 1 day followed by the time required for off line measurement etc. Phase 5 calibration trials and demonstration could take 1 - 2 weeks. <p>Scope of Work as mentioned in Appendix-I.</p> <p>The price of the installation/commissioning built into the total equipment price is GBP 19,500.00.</p> <p>The line installation supervision should be taken up by the Supplier at Buyer's Site at an appropriate time in consultation with the buyer. In this regard, Supplier's trained engineer will supervise the mechanical and electrical installation done by the buyer.</p> <p>Succession conduct and conclusion of the acceptance test for the installed goods and equipments shall be the responsibility of the supplier. The acceptance of the system will involve troublefree operation and ascertaining conformity with the ordered specifications and quality.</p> <p>Delay beyond the prescribed period in completion of contractual obligations will attract the imposition of Liquidated Damage Clause as mentioned in this tender document.</p>
14.	Training	It should be imparted for 04 persons for 5-7 days to the purchaser at purchaser's premises. It should be completed as per schedule mentioned under installation and commissioning.

		Supply of goods as per PO.
15.	Acceptance	<p>The materials dispatched should be as per our Purchase Order & completion of Installation, Commissioning, Demonstration & Training of all supplied items is to be provided. Installation & Training Certificate is to be submitted by the firm duly signed by user of CSIR-CGCRI.</p> <p>Demonstration of two successful preform fabrication runs as mentioned in the specification sheet during installation & commissioning of the whole system.</p> <p>On successful completion of acceptability test, receipt of deliverables, etc. and after the Buyer is satisfied with the working of the equipment, the acceptance certificate signed by the supplier and the representative of the buyer will be issued. The date on which such certificate is signed shall be deemed to be the date of successful commissioning of the equipment.</p>
16.	LD Clause	It will be applicable for delay in delivery / shipment, installation, commissioning and completion of all contractual obligations beyond deadlines as mentioned in the PO.
17.	Certificate for effecting payment	Firm will submit the installation and acceptance certificate indicating the completion of Installation, Commissioning, Demonstration & Training as well as duly signed by the user of CSIR-CGCRI alongwith Invoice for effecting the payment.

Yours faithfully,

[Signature]
(Anjani Kr. Pandey)

Stores & Purchase Officer

For & on behalf of the Council of Scientific & Industrial Research

अंजनी कुमार पाण्डेय / Anjani Kumar Pandey
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CONDITIONS OF CONTRACT

A GENERAL CONDITIONS OF CONTRACT (GCC)

Table of Contents

Sl. No.	Clause
2.1	Definitions
2.2	Contract Documents
2.3	Code of Integrity
2.4	Joint Venture, Consortium or Association
2.5	Scope of Supply
2.6	Suppliers' Responsibilities
2.7	Contract price
2.8	Copy Right
2.9	Application
2.10	Standards
2.11	Use of Contract Documents and Information
2.12	Patent Indemnity
2.13	Performance Security
2.14	Inspections and Tests
2.15	Packing
2.16	Delivery and Documents
2.17	Insurance
2.18	Transportation
2.19	Incidental Services
2.20	Spare Parts
2.21	Warranty
2.22	Terms of Payment
2.23	Change Orders and Contract Amendments
2.24	Assignment
2.25	Subcontracts
2.26	Extension of time
2.27	Liquidated Damages Clause
2.28	Termination for Default
2.29	Force Majeure
2.30	Termination for insolvency
2.31	Termination for Convenience
2.32	Settlement of Disputes
2.33	Governing Language
2.34	Applicable Law
2.35	Notice
2.36	Taxes and Duties
2.37	Right to use Defective Goods
2.38	Protection against Damage
2.39	Site preparation and installation
2.40	Import and Export Licenses
2.41	Risk Purchase Clause
2.42	Option Clause
2.43	Integrity Pact
2.44	Order Acceptance

GENERAL CONDITIONS OF CONTRACT (GCC)

2.1 Definitions

2.1.1

The following words and expressions shall have the meanings hereby assigned to them:

- (a) "Contract" means the Contract Agreement entered into between the Purchaser and the Supplier, together with the Contract Documents referred to therein, including all attachments, appendices, and all documents incorporated by reference therein.
- (b) "Contract Documents" means the documents listed in the Contract Agreement, including any amendments thereto.
- (c) "Contract Price" means the price payable to the Supplier as specified in the Contract Agreement, subject to such additions and adjustments thereto or deductions there from, as may be made pursuant to the Contract.
- (d) "Day" means calendar day.
- (e) "Completion" means the Dispatch of the Goods and related Services by the Supplier in accordance with the terms and conditions set forth in the Contract.
- (f) "GCC" means the General Conditions of Contract.
- (g) "Goods" means all of the commodities, raw material, machinery and equipment, and/or other materials that the Supplier is required to supply to the Purchaser under the Contract.
- (h) "Related Services" means the services incidental to the supply of the goods, such as transportation, insurance, installation, training and initial maintenance and other such obligations of the Supplier under the Contract.
- (i) "SCC" means the Special Conditions of Contract.
- (j) "Subcontractor" means any natural person, private or government entity, or a combination of the above, to whom any part of the Goods to be supplied or execution of any part of the Related Services is subcontracted by the Supplier.
- (k) "Supplier" means the natural person, private or government entity, or a combination of the above, whose bid to perform the Contract has been accepted by the Purchaser and is named as such in the Contract Agreement.
- (l) The "Council" means the Council of Scientific & Industrial Research (CSIR), registered under the Societies Registration Act, 1860 of the Govt. of India having its registered office at 2, Rafi Marg, New Delhi-110001, India.
- (m) The "Purchaser" means any of the constituent Laboratory/Institute of the Council situated at any designated place in India as specified in SCC.
- (n) "The final destination," where applicable, means the place named in the SCC.

2.2 Contract Documents

2.2.1

Subject to the order of precedence set forth in the Contract Agreement, all documents forming the Contract (and all parts thereof) are intended to be correlative, complementary, and mutually explanatory. The Contract Agreement shall be read as a whole.

2.3 Code of Integrity

2.3.1

Without prejudice to and in addition to the rights of the Purchaser to other penal provisions as per the bid documents or contract, if the Purchaser comes to a conclusion that a (prospective) bidder /supplier, directly or through an agent, has violated this code of integrity in competing for the contract or in executing a contract, the Purchaser may take appropriate measures including one or more of the following:

- a) Cancellation of the relevant contract and recovery of compensation for loss incurred by the purchaser;
- b) Forfeiture or encashment of any other security or bond relating to the procurement;
- c) Recovery of payments including advance payments, if any, made by the Purchaser along with interest thereon at the prevailing rate.
- a) Provisions in addition to above:
 - 1) Removal from the list of registered suppliers and banning/debarment of the bidder from participation in future procurements of the purchaser for a period not less than one year;
 - 2) In case of anti-competitive practices, information for further processing may be filed under a signature of the Joint Secretary level officer, with the Competition Commission of India;
 - 3) Initiation of suitable disciplinary or criminal proceedings against any individual or staff found responsible.

2.4 Joint Venture, Consortium or Association

- 2.4.1 If the Supplier is a joint venture, consortium, or association, all of the parties shall be jointly and severally liable to the Purchaser for the dispatch of the provisions of the Contract and shall designate one party to act as a leader with authority to bind the joint venture, consortium, or association. The composition or the constitution of the joint venture, consortium, or association shall not be altered without the prior consent of the Purchaser.

2.5 Scope of Supply

- 2.5.1 The Goods and Related Services to be supplied shall be as specified in Chapter 4 i.e. Specifications and allied technical details.

2.6 Suppliers' Responsibilities

- 2.6.1 The Supplier shall supply all the Goods and Related Services included in the Scope of Supply in accordance with Scope of Supply Clause of the GCC, and the Delivery and Completion Schedule, as per GCC Clause relating to delivery and document.

2.7 Contract price

- 2.7.1 Prices charged by the Supplier for the Goods supplied and the Related Services performed under the Contract shall not vary from the prices quoted by the Supplier in its bid.

2.8 Copy Right

- 2.8.1 The copyright in all drawings, documents, and other materials containing data and information furnished to the Purchaser by the Supplier herein shall remain vested in the Supplier, or, if they are furnished to the Purchaser directly or through the Supplier by any third party, including suppliers of materials, the copyright in such materials shall remain vested in such third party.

2.9 Application

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

2.10 Standards

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

2.11 Use of Contract Documents and Information

2.11.1

The Supplier shall not, without the Purchaser's prior written consent, disclose the Contract, or any provision thereof, or any specification, plan, drawing, pattern, sample or information furnished by or on behalf of the Purchaser in connection therewith, to any person other than a person employed by the Supplier in performance of the Contract. Disclosure to any such employed person shall be made in confidence and shall extend only so far, as may be necessary for purposes of such performance.

2.11.2

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

2.11.3

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

2.12 Patent Indemnity

2.12.1

The Supplier shall, subject to the Purchaser's compliance with GCC Sub-Clause 2.12.2 Indemnify and hold harmless the Purchaser and its employees and officers from and against any and all suits, actions or administrative proceedings, claims, demands, losses, damages, costs, and expenses of any nature, including attorney's fees and expenses, which the Purchaser may suffer as a result of any infringement or alleged infringement of any patent, utility model, registered design, trademark, copyright, or other intellectual property right registered or otherwise existing at the date of the Contract by reason of:

- (a) the installation of the Goods by the Supplier or the use of the Goods in India;
and
- (b) the sale in any country of the products produced by the Goods.

2.12.2

If any proceedings are brought or any claim is made against the Purchaser, the Purchaser shall promptly give the Supplier a notice thereof, and the Supplier may at its own expense and in the Purchaser's name conduct such proceedings or claim and any negotiations for the settlement of any such proceedings or claim.

2.13 Performance Security

2.13.1 Within 21 days of receipt of the notification of award/PO, the Supplier shall furnish performance security in the amount specified in SCC, valid till 60 days after the warranty period.

2.13.2

The proceeds of the performance security shall be payable to the Purchaser as compensation for any loss resulting from the Supplier's failure to complete its obligations under the Contract.

2.13.3

The Performance Security shall be denominated in Indian Rupees for the offers received for supplies within India and denominated in the currency of the contract in the case of offers received for supply from foreign countries or in equivalent Indian Rupees in case the Performance Security is submitted by the Indian Agent.

2.13.4

In the case of imports, the PS may be submitted either by the principal or by the Indian agent and, in the case of purchases from indigenous sources, the PS may be submitted by either the manufacturer or their authorized dealer/bidder.

2.13.5 The Performance security shall be in one of the following forms:

- (a) A Bank guarantee or stand-by Letter of Credit issued by a Nationalized/Scheduled bank located in India or a bank located abroad in the form provided in the bidding documents.
Or
- (b) A Banker's cheque or Account Payee demand draft in favour of the purchaser.

2.13.6

The performance security will be discharged by the Purchaser and returned to the Supplier not later than 60 days following the date of completion of the Supplier's performance obligations, including any warranty obligations, unless specified otherwise in SCC, without levy of any interest.

2.13.7

In the event of any contract amendment, the supplier shall, within 21 days of receipt of such amendment, furnish the amendment to the performance security, rendering the same valid for the duration of the contract, as amended for further period of 60 days thereafter.

2.13.8

The order confirmation must be received within 14 days. However, the Purchaser has the powers to extend the time frame for submission of order confirmation and submission of Performance Security (PS). Even after extension of time, if the order confirmation /PS are not received, the contract shall be cancelled provided that the purchaser, on being satisfied that it is not a case of cartelization and the integrity of the procurement process has been maintained, may, for cogent reasons, offer the next successful bidder an opportunity to match the financial bid of the first successful bidder, and if the offer is accepted, award the contract to the next successful bidder at the price bid of the first successful bidder.

2.13.9

Whenever, the bidder chooses to submit the Performance Security in the form of Bank Guarantee, then he should advise the banker issuing the Bank Guarantee to immediately send by Registered Post (A.D.) an unstamped duplicate copy of the Guarantee directly to the Purchaser with a covering letter to compare with the original BG for the correctness, genuineness, etc.

2.14 Inspections and Tests

2.14.1

The inspections & test, training required would be as detailed in Chapter-4 of the Bidding Document relating to Specification and Allied Technical details.

2.15 Packing

2.15.1

The Supplier shall provide such packing of the Goods as is required to prevent their damage or deterioration during transit to their final destination as indicated in the Contract. The packing shall be sufficient to withstand, without limitation, rough handling during transit and exposure to extreme temperatures, salt and precipitation during transit and open storage. Packing case size and weights shall take into consideration, where appropriate, the remoteness of the Goods' final destination and the absence of heavy handling facilities at all points in transit.

2.15.2

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

2.16 Delivery and Documents

2.16.1

Delivery of the Goods and completion and related services shall be made by the supplier in accordance with the terms specified by the Purchaser in the contract. The details of shipping and/or other documents to be furnished by the supplier are specified in SCC.

2.16.2

The terms FOB, FCA, CIF, CIP, etc. shall be governed by the rules prescribed in the current edition of the Inco terms published by the International Chambers of Commerce, Paris, currently it is Incoterms 2010.

2.16.3

The mode of transportation shall be as specified in SCC. In case the purchaser elects to have the transportation done through Air, then air lifting needs to be done through Air India only. In case Air India does not operate in the Airport of dispatch, then the bidder is free to engage the services of any other Airlines.

2.17 Insurance

2.17.1

Should the purchaser elect to buy on CIF/CIP basis, the Goods supplied under the Contract shall be fully insured against any loss or damage incidental to manufacture or acquisition, transportation, storage and delivery in the manner specified in SCC.

2.17.2

Where delivery of the goods is required by the purchaser on CIF or CIP basis the supplier shall arrange and pay for Cargo Insurance, naming the purchaser as beneficiary and initiate & pursue claims till settlement, on the event of any loss or damage.

2.17.3

Where delivery is on FOB or FCA basis, insurance would be the responsibility of the purchaser.

2.17.4

With a view to ensure that claims on insurance companies, if any, are lodged in time, the bidders and /or the Indian agent shall be responsible for follow up with their principals for ascertaining the dispatch details and informing the same to the Purchaser and he shall also liaise with the Purchaser to ascertain the arrival of the consignment after clearance so that immediately thereafter in his presence the consignment could be opened and the insurance claim be lodged, if required, without any loss of time. Any delay on the part of the bidder/Indian Agent would be viewed seriously and he shall be directly responsible for any loss sustained by the purchaser on the event of the delay.

2.18 Transportation

2.18.1

Where the Supplier is required under the Contract to deliver the Goods FOB, transport of the Goods, up to and including the point of putting the Goods on board the vessel at the specified port of loading, shall be arranged and paid for by the Supplier, and the cost thereof shall be included in the Contract price. Where the Supplier is required under the Contract to deliver the Goods FCA, transport of the Goods and delivery into the custody of the carrier at the place named by the Purchaser or other agreed point shall be arranged and paid for by the Supplier, and the cost thereof shall be included in the Contract Price.

2.18.2

Where the Supplier is required under the Contract to deliver the Goods CIF or CIP, transport of the Goods to the port of destination or such other named place of destination in the Purchaser's country, as shall be specified in the Contract, shall be arranged and paid for by the Supplier, and the cost thereof shall be included in the Contract Price.

2.18.3

In the case of supplies from within India, where the Supplier is required under the Contract to transport the Goods to a specified destination in India, defined as the Final Destination, transport to such destination, including insurance and storage, as specified in the Contract, shall be arranged by the Supplier, and the related costs shall be included in the Contract Price.

2.19 Incidental Services

2.19.1

The supplier may be required to provide any or all of the services, including training, if any, specified in chapter 4 of Tender Document.

2.20 Spare Parts

2.20.1

The Supplier shall be required to provide any or all of the following materials, notifications, and information pertaining to spare parts manufactured or distributed by the Supplier:

- (a) Such spare parts as the Purchaser may elect to purchase from the Supplier, providing that this election shall not relieve the Supplier of any warranty obligations under the Contract; and
- (b) In the event of termination of production of the spare parts:
 - (i) Advance notification to the Purchaser of the pending termination, in sufficient time to permit the Purchaser to procure needed requirements; and
 - (ii) Following such termination, furnishing at no cost to the Purchaser, the blueprints, drawings and specifications of the spare parts, if requested.

2.21 Warranty

2.21.1

The Supplier warrants that all the Goods are new, unused, and of the most recent or current models, and that they incorporate all recent improvements in design and materials, unless provided otherwise in the Contract.

2.21.2

The Supplier further warrants that the Goods shall be free from defects arising from any act or omission of the Supplier or arising from design, materials, and workmanship, under normal use in the conditions prevailing in India.

2.21.3

Unless otherwise specified in the SCC, the warranty shall remain valid for Twelve (12) months after the Goods, or any portion thereof as the case may be, have been delivered to and accepted at the final destination indicated in the SCC, or for Eighteen (18) months after the date of shipment from the port or place of loading in the country of origin, whichever period concludes earlier.

2.21.4

The Purchaser shall give notice to the Supplier stating the nature of any such defects together with all available evidence thereof, promptly following the discovery thereof. The Purchaser shall afford all reasonable opportunity for the Supplier to inspect such defects.

2.21.5

Upon receipt of such notice, the Supplier shall, within a reasonable period of time, expeditiously repair or replace the defective Goods or parts thereof, at no cost to the Purchaser.

2.21.6

If having been notified, the Supplier fails to remedy the defect within a reasonable period of time; the Purchaser may proceed to take within a reasonable period such remedial action as may be necessary, at the Supplier's risk and expense and without prejudice to any other rights which the Purchaser may have against the Supplier under the Contract.

2.21.7

Goods requiring warranty replacements must be replaced on free of cost basis to the purchaser.

2.22 Terms of Payment

2.22.1

The method and conditions of payment to be made to the Supplier under this Contract shall be as specified in the SCC.

2.22.2

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

2.22.3

Payments shall be made promptly by the Purchaser but in no case later than thirty (30) days after submission of the invoice or claim by the Supplier. While claiming the payment, the supplier should certify in the bill/invoice that the payment being claimed strictly in terms of the contract and all obligations on the part of the supplier for claiming the payment have been fulfilled as required under the contract.

2.22.4 Payment shall be made in currency as indicated in the contract.

2.23 Change Orders and Contract Amendments

2.23.1

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

- (a) Increase or decrease in the quantity required, exercise of quantity opinion clause;
- (b) Changes in schedule of deliveries and terms of delivery;
- (c) The changes in inspection arrangements;
- (d) Changes in terms of payments and statutory levies;
- (e) Changes due to any other situation not anticipated;

2.23.2

No changes in the price quoted shall be permitted after the purchase order has been issued except on account of statutory variations.

2.23.3

No variation or modification in the terms of the contract shall be made except by written amendment signed by the parties.

2.24 Assignment

2.24.1

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

2.25 Subcontracts

2.25.1

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

2.26 Extension of time

2.26.1 Delivery of the Goods and performance of the Services shall be made by the Supplier in accordance with the time schedule specified by the Purchaser.

2.26.2

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

2.26.3

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

2.27 Liquidated Damages

2.27.1

Subject to GCC Clause on Force Majeure, if the Supplier fails to deliver any or all of the Goods or to perform the Services within the period(s) specified in the Contract, the Purchaser shall, without prejudice to its other remedies under the Contract, deduct from the Contract Price, as penalty, a sum equivalent to the percentage specified in SCC of the delivered price of the delayed Goods or unperformed Services or contract value in case the delivered price of the delayed goods or unperformed services cannot be ascertained from the contract, for each week or part thereof of delay until actual delivery or performance, up to a maximum deduction of the Percentage specified in SCC. Once the maximum is reached, the Purchaser may consider termination of the Contract pursuant to GCC Clause on Termination for Default.

2.28 Termination for Default

2.28.1

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

- (a) If the Supplier fails to deliver any or all of the Goods within the period(s) specified in the contract, or within any extension thereof granted by the Purchaser pursuant to GCC Clause on Extension of Time; or
- (b) If the Supplier fails to perform any other obligation(s) under the Contract.
- (c) If the Supplier, in the judgment of the Purchaser has engaged in corrupt or fraudulent or collusive or coercive practices etc as defined in GCC Clause and ITB clause on code of integrity in competing for or in executing the Contract.

2.28.2 In the event the purchaser terminates the contract in whole or in part, he may take recourse to any one or more of the following action:

- (a) The Performance Security is to be forfeited;

(b) The purchaser may procure, upon such terms and in such manner as it deems appropriate, stores similar to those undelivered, and the supplier shall be liable for all available actions against it in terms of the contract.

(c) However, the supplier shall continue to perform the contract to the extent not terminated.

2.29 Force Majeure

2.29.1

Notwithstanding the provisions of GCC Clauses relating to extension of time, Liquidated damages and Termination for Default the Supplier shall not be liable for forfeiture of its performance security, liquidated damages or termination for default, if and to the extent that, its delay in performance or other failure to perform its obligations under the Contract is the result of an event of Force Majeure.

2.29.2

For purposes of this Clause, "Force Majeure" means an event or situation beyond the control of the Supplier that is not foreseeable, is unavoidable, and its origin is not due to negligence or lack of care on the part of the Supplier. Such events may include, but not be limited to, acts of the Purchaser in its sovereign capacity, wars or revolutions, fires, floods, epidemics, quarantine restrictions, and freight embargoes.

2.29.3

If a Force Majeure situation arises, the Supplier shall promptly notify the Purchaser in writing of such conditions and the cause thereof within 21 days of its occurrence. 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.

2.29.4

If the performance in whole or in part or any obligations under the contract is prevented or delayed by any reason of Force Majeure for a period exceeding 60 days, either party may at its option terminate the contract without any financial repercussions on either side.

2.30 Termination for Insolvency

2.30.1

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

2.31 Termination for Convenience

2.31.1

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

2.31.2

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

- (a) To have any portion completed and delivered at the Contract terms and prices; and/or
- (b) To cancel the remainder and pay to the Supplier an agreed amount for partially completed Goods and for materials and parts previously procured by the Supplier.

2.32 Settlement of Disputes

2.32.1

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

2.32.2

If, after twenty-one (21) days, the parties have failed to resolve their dispute or difference by such mutual consultation, then either the Purchaser or the Supplier may give notice to the other party of its intention to commence arbitration, as hereinafter provided, as to the matter in dispute, and no arbitration in respect of this matter may be commenced unless such notice is given. Any dispute or difference in respect of which a notice of intention to commence arbitration has been given in accordance with this Clause shall be finally settled by arbitration. Arbitration may be commenced prior to or after delivery of the Goods under the Contract.

2.32.3

The dispute settlement mechanism/arbitration proceedings shall be concluded as under:

- (a) If any dispute or difference arises between the Purchaser and a domestic supplier relating to any matter arising out of or connected with this agreement, such disputes or difference shall be settled in accordance with the Indian Arbitration & Conciliation Act, 1996, the rules there under and any statutory modifications or re-enactments thereof shall apply to the arbitration proceedings. The dispute shall be referred to the Delhi International Arbitration Centre (DIAC), Delhi High Court, New Delhi. The award of the arbitrator so appointed shall be final, conclusive and binding on all parties to this order.
- (b) In the case of a dispute between the purchaser and a Foreign Supplier, the dispute shall be settled by arbitration in accordance with provision of sub-clause (a) above. But if this is not acceptable to the supplier then the dispute shall be settled in accordance with provisions of UNCITRAL (United Nations Commission on International Trade Law) Arbitration Rules.

2.32.4

The venue of the arbitration shall be the place from where the purchase order or contract is issued.

2.32.5

Notwithstanding, any reference to arbitration herein,

- (a) The parties shall continue to perform their respective obligations under the Contract unless they otherwise agree; and
- (b) the Purchaser shall pay the Supplier any monies due the Supplier.

2.33 Governing Language

2.33.1

The contract shall be written in English language which shall govern its interpretation. All correspondence and other documents pertaining to the Contract, which are exchanged by the parties, shall be written in the English language only.

2.34 Applicable Law

2.34.1

The Contract shall be interpreted in accordance with the laws of the Union of India and all disputes shall be subject to place of jurisdiction as specified in SCC.

2.35 Notices

2.35.1

Any notice given by one party to the other pursuant to this contract/order shall be sent to the other party in writing or by cable, telex, FAX, e-mail or and confirmed in writing to the other party's address specified in the SCC.

2.35.2

A notice shall be effective when delivered or on the notice's effective date, whichever is later.

2.36 Taxes and Duties

2.36.1

For goods manufactured outside India, the Supplier shall be entirely responsible for all taxes, stamp duties, license fees, and other such levies imposed outside India.

2.36.2

For goods Manufactured within India, the Supplier shall be entirely responsible for all taxes, duties, license fees, etc., incurred till its final manufacture/production.

2.36.3

If any tax exemptions, reductions, allowances or privileges may be available to the Supplier in India, the Purchaser shall make its best efforts to enable the Supplier to benefit from any such tax savings to the maximum allowable extent.

2.36.4

All payments due under the contract shall be paid after deduction of statutory levies (at source) (like IT, etc.) wherever applicable.

2.36.5

Customs Duty – If the supply is from abroad this Institute is permitted to import goods as per notification No.51/96 – Customs and pay a concessional duty up to 5% as per notification 24/2002 – Customs on all imports.

2.37 Right to use Defective Goods

2.37.1

If after delivery, acceptance and installation and within the guarantee and warranty period, the operation or use of the goods proves to be unsatisfactory, the Purchaser shall have the right to continue to operate or use such goods until rectifications of defects, errors or omissions by repair or by partial or complete replacement is made without interfering with the Purchaser's operation.

2.38 Protection against Damage

2.38.1

The system shall not be prone to damage during power failures and trip outs. The normal voltage and frequency conditions available at site as under:

- (a) Voltage 230 volts – Single phase/ 415 V 3 phase (+_ 10%)
- (b) Frequency 50 Hz.

2.39 Site preparation and installation

2.39.1

The Purchaser is solely responsible for the construction of the equipment sites in compliance with the technical and environmental specifications defined by the Supplier. The Purchaser will designate the installation sites before the scheduled installation date to allow the Supplier to perform a site inspection to verify the appropriateness of the sites before the installation of the Equipment, if required. The supplier shall inform the purchaser about the site preparation, if any, needed for installation, of the goods at the purchaser's site immediately after notification of award/contract.

2.40 Import and Export Licenses

2.40.1

If the ordered materials are covered under restricted category of EXIM policy in India the Vendor / Agent may intimate such information for obtaining necessary, license in India.

2.40.2

If the ordered equipment is subject to Vendor procuring an export license from the designated government agency / country from where the goods are shipped / sold, the vendor has to mention the name, address of the government agency / authority. The vendor must also mention the time period within which the license will be granted in normal course.

2.41 Risk Purchase Clause

2.41.1

If the supplier fails to deliver the goods within the maximum delivery period specified in the contract or Purchase Order, the purchaser may procure, upon such terms and in such a manner as it deems appropriate, Goods or Services similar to those undelivered and the Supplier shall be liable to the purchaser for any excess costs incurred for such similar goods or services.

2.42 Option Clause

2.42.1

The Purchaser reserves the right to increase or decrease the quantity of the required goods up to 25% (Twenty-Five) per cent at any time, till final delivery date (or the extended delivery date of the contract), by giving reasonable notice even though the quantity ordered initially has been supplied in full before the last date of the delivery period (or the extended delivery period)

2.43 Integrity Pact

2.43.1

The SCC shall specify whether there is a need to enter into a separate Integrity pact or not.

2.43.2

The names and contact details of the Independent External Monitors (IEM) on the event of the need of IP is as detailed in the SCC.

2.44 Order Acceptance

2.44.1

The successful bidder should submit Order acceptance within 07 days from the date of issue of order/signing of contract, failing which it shall be presumed that the vendor is not interested and his bid security is liable to be forfeited pursuant to clause 1.16.9 of ITB.

30/01/16.02.2024
अंजनी कुमार पाण्डेय / Anjani Kumar Pandey
संग्रह एवं क्रय अधिकारी / Stores & Purchase Officer
सीएसआईआर-केन्द्रीय काँच एवं सिरामिक अनुसंधान संस्थान
CSIR-CENTRAL GLASS & CERAMIC RESEARCH INSTITUTE
196, राजा एस. सी. मुल्लिक रोड / 196, Raja S.C. Mullick Road
कोलकाता / Kolkata-700 032

SPECIAL CONDITIONS OF CONTRACT (SCC)

The following Special Conditions of Contract (SCC) shall supplement and / or amend the General Conditions of Contract (GCC). Whenever there is a conflict, the provisions herein shall prevail over those in the GCC.

SCC 1	The Purchaser is: Director, CSIR-Central Glass & Ceramic Research Institute, 196, Raja S. C. Mullick Road, P.O. Jadavpur, Kolkata-700032, West Bengal, India.
SCC 2	The Supplier is: M/s. SG Controls Limited, Newton Hall, Newton, Cambridge, CB 22 7ZE.
SCC 4	Calibration: Certificates of calibration traceable to International Standards must be provided, if applicable.
SCC 5	Final Destination: CSIR-Central Glass & Ceramic Research Institute, 196, Raja S. C. Mullick Road, P.O. Jadavpur, Kolkata-700032, West Bengal, India
SCC 6	Order Acknowledgement/Confirmation: The Order Acknowledgement must be submitted immediately and in any case, within 07 days from the date of placement of this Purchase Order indicating detailed specifications of the equipment as mentioned in the purchase order including the value of the purchase order/equipment. You are requested to return the duplicate copy of this Purchase Order, duly signed and stamped, as a token of your acceptance to this order.
SCC 7	Performance Security: The amount of the Performance Security shall be: GBP 28,500.00 [GBP Twenty Eight Thousand Five Hundred only] . The Supplier shall furnish performance security equivalent to 5% of the contract price, valid till 60 days after the warranty period at the time of release of balance 30% payment after completion of Installation, Commissioning, Demonstration and Training of all the foreign supplies and Acceptance Certificate issued by the Purchaser and fulfillment of all contractual obligations prescribed in Purchase Order. The proceeds of the performance security shall be payable to the Purchaser as compensation for any loss resulting from the Supplier's failure to complete its obligations under the Contract. The Performance security shall be in one of the following forms: a) A Bank guarantee or stand-by Letter of Credit issued by a Nationalized/Scheduled bank located in India Or b) A Banker's cheque or Account Payee demand draft in favour of the purchaser. The performance security will be discharged by the Purchaser and returned to the Supplier not later than 60 days following the date of completion of the Supplier's performance obligations, including any warranty obligations, without levy of any interest.
SCC 8	Delivery / Shipment : The shipment of the Goods shall be within 12 months from date of establishment of irrevocable Letter of Credit. The delivery should be synchronized alongwith the supply of main imported items. (IF APPLICABLE) Denial Clause (over and above levy of Liquidated Damage): any increase in statutory duties and / or upward rise in prices due to the PVC (Price Variation Clause) clause and / or any adverse fluctuation in foreign exchange are to be borne by the seller during the extended delivery period, while the purchaser reserves the right to get any benefit of a downward revisions in statutory duties, PVC and foreign exchange rate. Except as provided under the Force Majeure clause, a delay by the Supplier in the performance of its delivery obligations shall render the Supplier liable to the imposition of penalty pursuant to Penalty Clause unless an extension of time is agreed upon pursuant to above clause without the application of penalty clause.
SCC 9	Part supply will not be accepted.
SCC 10	The country of origin of the Goods is UK.
SCC 11	The port of shipment of the Goods is UK.
SCC 12	The mode of shipment: By Sea – FOB UK International Seaport as per Purchase Order.

SCC 14	<p>Pre-Despatch Inspection: (NOT APPLICABLE)</p> <p>The Director, CSIR-Central Glass & Ceramic Research Institute, Kolkata reserves the right to depute the persons from CSIR-CGCRI for pre-despatch inspection, if required, at the Works of Supplier. The Supplier shall inform the Purchaser the readiness of the equipment before its despatch for arranging pre-despatch inspection.</p>
SCC 15	<p>Installation & Commissioning:</p> <p><u>The installation / commissioning / demonstration will be done by the supplier in several different phases as mentioned below:</u></p> <ol style="list-style-type: none"> 1. Phase 1 is the unpacking, siting and reattachment of items removed for transit. Typically this will take 1 week. 2. Phase 2 can then commence where the machine will be made available for the Purchasers contractors to make the service connections to the machine. Given that this can involve high purity pipework for multiple gases and leak checking Phase 2 service hookup can take 1-2 weeks typically assuming the purchasers contractors are available to start immediately. 3. Phase 3 commences after service connections are made and involves basic tests of functionality followed by a period of purging with N₂ to dry down the system which is a prerequisite before any filling with live chemicals can take place. The drying process cannot be accelerated and takes a minimum of 1 week. 4. Phase 4 involves the introduction of live process gases and the filling of the bubblers with the high purity reactive chemicals after which commission test are undertaken. Phase 4 can take 1 week. 5. Phase 5 involves running process to calibrate the system followed by the undertaking of demonstration tests. Fabrication of any preform will typically take 1 day followed by the time required for off line measurement etc. Phase 5 calibration trials and demonstration could take 1 - 2 weeks. <p>The price of the installation/commissioning built into the total equipment price is GBP 19,500.00.</p> <p>The line installation supervision should be taken up by the Supplier at Buyer's Site at an appropriate time in consultation with the buyer. In this regard, Supplier's trained engineer will supervise the mechanical and electrical installation done by the buyer.</p> <p>Succession conduct and conclusion of the acceptance test for the installed goods and equipments shall be the responsibility of the supplier. The acceptance of the system will involve troublefree operation and ascertaining conformity with the ordered specifications and quality.</p> <p>The Supplier shall depute its experts / engineers at CSIR-CGCRI for carrying out the installation and commissioning and training of the equipment to the entire satisfaction of the CSIR-CGCRI. The charges are included in the Contract Price of the goods.</p> <p>Delay beyond the prescribed period in completion of contractual obligations will attract the imposition of Liquidated Damage Clause as mentioned in this tender document.</p>
SCC 16	<p>Training:</p> <p>It should be imparted for 04 persons for 5-7 days to the purchaser at purchaser's premises at no extra cost. It should be completed as per schedule mentioned under installation and commissioning.</p>
SCC 16	<p>Inspection and Tests:-</p> <p>The Inspection tests prior to shipment of goods and at final acceptance at buyers site.</p> <p>After the goods are manufactured and assembled, inspection and testing of the goods shall be carried out at the Supplier's plant by the Supplier prior to shipment to check whether the goods are in conformity with the technical specifications.</p> <p>Manufacturers Test Certificate with data sheet shall be issued to the effect and submit alongwith delivery documents.</p> <p>The acceptance test will be conducted by the Purchaser, their consultant or other such person nominated by the Purchaser at its option after the equipment is installed at Purchaser's site in the presence of supplier's representatives. The acceptance will involve trouble free operation. There shall not be any</p>

	<p>additional charges for carrying out acceptance test. No malfunction, partial or complete failure of any part of the equipment is expected to occur. The Supplier shall maintain necessary log in respect of the result of the test to establish to the entire satisfaction of the Purchaser, the successful completion of the test specified. In the event of the ordered item failing to pass the acceptance test, a period not exceeding two weeks will be given to rectify the defects and clear the acceptance test, failing which, the Purchaser reserve the right to get the equipment replaced by the Supplier at no extra cost to the Purchaser. Successful conduct and conclusion of the acceptance test for the installed goods and equipment shall also be the responsibility and at the cost of the Supplier.</p> <p>Before the goods and equipment are taken over by the Purchaser, the Supplier shall supply operation and maintenance Manuals together with Drawings of the goods and equipment built. These shall be in such details as will enable the Purchase to operate, maintain, adjust and repair all parts of the works as stated in the specifications. The Manuals and Drawings shall be in the ruling language (English) and in such form and numbers as stated in the Contract. Unless and otherwise agreed, the goods and equipment shall not be considered to be completed for the purposes of taking over until such Manuals and Drawing have been supplied to the Purchaser.</p> <p>On successful completion of acceptability test, receipt of deliverables, etc. and after the Purchaser is satisfied with the working of the equipment, the acceptance certificate signed by the Supplier and the representative of the Purchaser will be issued. The date on which such certificate is signed shall be deemed to be the date of successful commissioning of the equipment.</p>
SCC 17	<p>Annual Maintenance Contract (AMC) (NOT APPLICABLE)</p> <p>In case CSIR-Central Glass & Ceramic Research Institute, Kolkata requires AMC, a separate contract will be issued to the vendor based on the AMC quote received from M/s -xxxxxxxxxxxxxxxx.</p>
SCC 18	<p>Packing: The marking and documentation within and outside the packages shall be:</p> <ul style="list-style-type: none"> a. Each package should have a packing list within it detailing the part No.(s), description, quantity etc. b. Outside each package, the contract No., the name and address of the purchaser and the final destination should be indicated on all sides and top. c. Each package should be marked as 1/x, 2/x, 3/x.....x/x, where "x" is the total No. of packages contained in the consignment. d. All the sides and top of each package should carry an appropriate indication/label/stickers indicating the precautions to be taken while handling/storage.
SCC 19	<p>Shipping and other Documents :</p> <p>Details of Shipping and other Documents to be furnished by the Supplier are</p> <ul style="list-style-type: none"> (i) For Goods manufactured within India <p>Within 24 hours of dispatch, the supplier shall notify the purchaser the complete details of dispatch and also supply following documents by registered post / speed post and copies thereof by FAX:</p> <ul style="list-style-type: none"> (a)Two copies of Supplier's Invoice indicating, <i>inter-alia</i> description and specification of the goods, quantity, unit price, total value; (b)Packing list; (c)Certificate of country of origin; (d)Insurance certificate, if required under the contract; (e)Railway receipt/Consignment note; (f)Manufacturer's guarantee certificate and in-house inspection certificate; (g) Inspection certificate issued by purchaser's inspector, if any and (h) Any other document(s) as and when required in terms of the contract. <p>Note:</p> <p>1.The nomenclature used for the item description in the invoices(s), packing list(s) and the delivery note(s) etc. should be identical to that used in the contract. The dispatch particulars including the name of the transporter should also be mentioned in the Invoice(s)</p>

	<p>2. The above documents should be received by the Purchaser before arrival of the Goods and, if not received, the Supplier will be responsible for any consequent expenses</p> <p>(ii) For Goods manufactured abroad</p> <p>Within 24 hours of dispatch, the supplier shall notify the purchaser the complete details of dispatch and also supply following documents by Registered Post/courier and copies thereof by FAX:</p> <ul style="list-style-type: none"> (a) Two copies of supplier's Invoice giving full details of the goods including quantity, value, etc.; (b) Packing list; (c) Certificate of country of origin; (d) Manufacturer's guarantee and Inspection certificate; (e) Inspection certificate issued by the Purchaser's Inspector, if any; (f) Insurance Certificate, if required under the contract; (g) Name of the Vessel/Carrier; (h) Bill of Lading/Airway Bill; (i) Port of Loading; (j) Date of Shipment; (k) Port of Discharge & expected date of arrival of goods and (l) Any other document(s) as and when required in terms of the contract. <p>Note:</p> <p>1. The nomenclature used for the item description in the invoices(s), packing list(s) and the delivery note(s) etc. should be identical to that used in the contract. The dispatch particulars including the name of the transporter should also be mentioned in the Invoice(s).</p> <p>2. The above documents should be received by the Purchaser before arrival of the Goods and, if not received, the Supplier will be responsible for any consequent expenses.</p>
SCC 20	<p>Mode of dispatch:</p> <p>In case of supplies from within India, the mode of transportation shall be by Road. In case of supplies from abroad, the mode of transportation shall be by Sea.</p>
SCC 21	<p>Insurance:</p> <p>The Insurance in respect of goods to cover all risks upto final destination shall be borne by Purchaser at its own costs.</p> <p>The Insurance shall be for an amount equal to 110% of the CIF or CIP value of the contract from within "warehouse to warehouse (final destination)" on "all risk basis" including strikes, riots and civil commotion</p>
SCC 22	<p>Warranty:</p> <p>The Supplier warrants that all the Goods are new, unused, and of the most recent or current models, and that they incorporate all recent improvements in design and materials, unless provided otherwise in the Contract. The Supplier should further warrant that the Goods shall be free from defects arising from any act or omission of the Supplier or arising from design, materials, and workmanship, under normal use in the conditions prevailing in India.</p> <p>1 (One) Year comprehensive warranty from the date of completion of successful Installation, Commissioning, Training and completion of all contractual obligations to the entire satisfaction of this Institute (Purchaser).</p> <p>The Buyer shall promptly notify the Supplier in writing of any claims arising under this warranty.</p>

	<p>Upon receipt of such notice, the Supplier shall, within 21 days, repair or replace the defective goods or parts thereof, free of cost at the ultimate destination point / Buyer's site i.e CGCRI premises. The Supplier shall take over the replaced parts/goods at the time of their replacement. No claim whatsoever shall lie on the Buyer for the replaced parts/goods thereafter on this account.</p> <p>The period for correction of defects in the warranty period is 21 days.</p> <p>If the Supplier having been notified fails to remedy the defects within 21 days, the Buyer may proceed to take such remedial action as may be necessary, at the Supplier's risk and expenses and without prejudice to any other rights which the Buyer may have against the Supplier under the order.</p>
SCC 23	<p>Payment:</p> <p><u>Payment shall be made in currency of the Contract in the following manner:</u></p> <p>An irrevocable Letter of Credit in GBP for 100% of Order Value shall be established in favour of Supplier, out of which payment shall be released in the following ways.</p> <p>(a) On Shipment: Seventy percent (70%) of the contract price of Goods shipped shall be paid through irrevocable letter of credit opened in favour of the Supplier in a bank in its country, upon submission of shipment documents.</p> <p>(b) On Acceptance: Thirty percent (30%) of the contract price of Goods shall be paid through Irrevocable LC after successful installation, commissioning, demonstration and training including completion of all contractual obligations upon submission of claim supported by the acceptance certificate issued by the Purchaser along with the Performance security including fulfillment of all contractual obligations subject to the submission of PBG @ 5% of the order value covering the period beyond 02 months of the Warranty Period of 1 year.</p> <p>Note: All bank charges abroad shall be to the account of the beneficiary i.e supplier and all bank charges in India shall be to the account of Purchaser.</p>
SCC 24	<p>Liquidated Damages :</p> <p>Subject to the operation of force majeure, time of delivery and acceptance is the essence of this order. The supplier shall arrange to ship the consignment within 12 months from the date of establishment of Letter of Credit unless an extension is granted by a mutual agreement. As the sole and exclusive remedy for delay in shipment beyond the agreed upon shipment date, the supplier shall pay to the buyer liquidated damages at 0.5% per week or part of a week towards late delivery and towards delay in installation and commissioning including all contractual obligations. The maximum amount of liquidated damages shall be 10%. The liquidated damages shall be levied on the delivered price of the delayed Goods or unperformed Services or contract value.</p>
SCC 25	<p>Site preparation and installation:</p> <p>The Purchaser along with the Supplier will demarcate the scope along with responsibility of site preparation and installation. The Purchaser in consultation with the Supplier will designate the installation sites before the scheduled installation date to allow the Supplier to perform a site inspection to verify the appropriateness of the sites before the installation of the Equipment, if required. The supplier shall inform the purchaser about the site preparation, if any, needed for installation, of the goods at the purchaser's site immediately after notification of award/contract.</p> <p>Scope of Work as mentioned in Appendix-I.</p>
SCC 26	<p>Manuals & Drawing:</p> <p>Supplier will make available to the Buyer necessary documents and manuals. Before the goods and equipment's are taken over by the Buyer, the Supplier shall supply operation and maintenance manuals together with drawings of the goods and equipment's built. These shall be in such details as will enable the Buyer to operate, maintain, adjust and repair all parts of the equipment to be delivered under this Purchase Order.</p> <p>The manuals and drawings shall be in the ruling language (English).</p> <p>Unless and otherwise agreed, the goods / equipment shall not be considered to be completed for the purposes of taking over until such manuals and drawing have been supplied to the Buyer.</p>

SCC 27	<p>Notice of Improvement:</p> <p>On a continuing basis, the supplier shall inform the buyer the time to time improvement in respect of the equipment. Such information shall be accompanied by technical newsletter, reliability improvement notice etc.</p>
SCC 28	<p>Force Majeure:</p> <p>Notwithstanding the provisions relating to extension of time and penalty the Supplier shall not be liable for forfeiture of its performance security or liquidated damages, if and to the extent that, its delay in performance or other failure to perform its obligations under the Contract is the result of an event of Force Majeure.</p> <p>For purposes of this Clause, "Force Majeure" means an event or situation beyond the control of the Supplier that is not foreseeable, is unavoidable, and its origin is not due to negligence or lack of care on the part of the Supplier. Such events may include, but not be limited to, acts of the Purchaser in its sovereign capacity, wars or revolutions, fires, floods, epidemics, quarantine restrictions, and freight embargoes.</p> <p>If a Force Majeure situation arises, the Supplier shall promptly notify the Purchaser in writing of such conditions and the cause thereof within 21 days of its occurrence. 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.</p> <p>If the performance in whole or in part or any obligations under the contract is prevented or delayed by any reason of force majeure for a period exceeding 60 days, either party may at its option terminate the contract without any financial repercussions on either side.</p>
SCC 29	<p>Settlement of Disputes:</p> <p>(i) The Purchaser and the supplier shall make every effort to resolve amicably by direct informal negotiation any disagreement or dispute arising between them under or in connection with the Contract.</p> <p>(ii) If, after twenty-one (21) days, the parties have failed to resolve their dispute or difference by such mutual consultation, then either the Purchaser or the Supplier may give notice to the other party of its intention to commence arbitration, as hereinafter provided, as to the matter in dispute, and no arbitration in respect of this matter may be commenced unless such notice is given. Any dispute or difference in respect of which notice of intention to commence arbitration has been given in accordance with this Clause shall be finally settled by arbitration. Arbitration may be commenced prior to or after delivery of the Goods under the Contract.</p> <p>(iii) The dispute settlement mechanism/arbitration proceedings shall be concluded as under:</p> <p>(a) In case of Dispute or difference arising between the Purchaser and a domestic supplier relating to any matter arising out of or connected with this agreement, such disputes or difference shall be settled in accordance with the Indian Arbitration & Conciliation Act, 1996 and Arbitration & Conciliation (Amendment) Act 2015, the rules there under and any statutory modifications or re-enactments thereof shall apply to the arbitration proceedings. The dispute shall be referred to the Delhi International Arbitration Centre (DIAC), Delhi High Court, New Delhi.</p> <p>(b) "Arbitration Clause" in the domestic agreement will be as under:- "ARBITRATION" 1. In the event of any question /dispute/difference arising under the agreement or in connection herewith (except as to matters the decision of which is specially provided under this agreement) the same shall be referred to the Delhi International Arbitration Centre for appointment of Arbitrator to adjudicate the dispute. 2. The award of the Arbitrator shall be final and binding on the parties. The Arbitrator may give interim award(s) and /or directions, as may be required. 3. Subject to the aforesaid provision, the arbitration and conciliation act, 1996 and the rules made hereunder and any modification thereof from time to time being in force shall be deemed to apply to the Arbitration proceedings under this clause."</p> <p>(c) in the case of a dispute between the purchaser and a Foreign Supplier, the dispute shall be settled by arbitration in accordance with provision of sub-clause (a) above. But if this is not acceptable to the supplier then the dispute shall be settled in accordance with provisions of UNCITRAL (United Nations Commission on International Trade Law) Arbitration Rules.</p>

	<p>(iv) The venue of the arbitration shall be the place from where the purchase order or contract is issued.</p> <p>(v) Notwithstanding any reference to arbitration herein,</p> <p>(a) the parties shall continue to perform their respective obligations under the Contract unless the otherwise agree; and</p> <p>(b) the Purchaser shall pay the Supplier any monies due the Supplier.</p>
SCC 30	<p>Supplier's Integrity:</p> <p>The Supplier is responsible for and obliged to conduct all contracted activities in accordance with the contract using state of the art methods and economic principles and exercising all means available to achieve the performance specified in the contract.</p>
SCC 31	<p>Integrity Pact:</p> <p>The Integrity pact is already signed during tendering process.</p>
SCC 32	<p>Termination for Default:</p> <p>The Buyer may, without prejudice to any other remedy for breach of contract, by written notice of default sent to the Supplier, terminate the Purchase Order / Contract in whole or part</p> <p>a) If the Supplier fails to deliver any or all of the Goods within the period(s) specified in the Purchase Order, or within any extension thereof granted by the Buyer.</p> <p>b) If the Supplier fails to perform any other obligation(s) under the Purchase Order.</p> <p>c) If the Supplier, in the judgment of the Buyer has engaged in corrupt or fraudulent or collusive or coercive competing for or in executing the Purchase Order /Contract.</p> <p>In the event the Buyer terminates the contract in whole or in part, he may take recourse to any one or more of the following action:</p> <p>a) The Buyer may procure, upon such terms and in such manner as it deems appropriate, stores similar to those undelivered, and the Supplier shall be liable for all available actions against it in terms of the contract.</p> <p>b) However, the Supplier shall continue to perform the contract to the extent not terminated.</p>
SCC 33	<p>Applicable Laws:</p> <p>The Contract shall be interpreted in accordance with the laws of the Union of India and all disputes shall be subject to the jurisdiction of Kolkata, India.</p>

16.03.2024

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APPENDIX 1

TECHNICAL SPECIFICATIONS

ITEM 1 MCVD PREFORM MANUFACTURING SYSTEM COMPRISING:

The below is the specification for Model number "CGCRI MCVD"

Main System comprising:

1.1 GAS CONTROL SYSTEM Including:

▪ 1.1.1 Construction

Hybrid glass/teflon/stainless steel construction for maximum purity with corrosion resistance and as small a footprint as is practical. Connections for gases and power are on the top of the cabinet.

• 1.1.2 Bubblers

3 bubbler channels for SiCl_4 (5 litre), GeCl_4 (1 litre), POCl_3 (1 litre). $\text{SiCl}_4/\text{GeCl}_4/\text{POCl}_3$ bubblers are of borosilicate glass construction and in conjunction with the transparent oil bath allow the liquid level to be visually monitored at all times by the operator.

• 1.1.3 Oil Bath

Oil Bath for bubblers - All bubblers are housed a single temperature controlled oil bath ie all bubblers run at the same temperature.

The oil bath allows set points in the range 20-50 deg C with accuracy of at least 0.1 deg C after temperature equilibration. The oil bath has a transparent front window for viewing the reagent level in each bubbler. A resistance thermometer mounted in the oil bath and the MCVD PLC control system provides PID controls to drive the bath heater, gives a temperature display and provides the ability to use out of limit alarms. Since all bubblers are in the same bath the temperature of the oil represents the temperatures in each bubbler. The heater work in opposition to a chiller unit which are situated with the heater circulating pump and oil reservoir.

• 1.1.4 Elevated Temperature N₂ Purged Dry Box

This unit encloses the "wetted" pipework/valves and the bubblers and is constructed using folded 316 stainless steel box with painted exterior. The front window is of toughened glass construction with a high integrity flange seal which in conjunction with the steel box ensures adequate containment in the extremely unlikely event of a chemical leakage. The window is designed to be lifted out, so providing access to the dry box interior for major maintenance and inspection operations. More limited access without window removal is possible via three glove ports. These allow access to the bubbler valves and fittings without breaching the leak integrity of the Dry/Hot Box.

The Dry/Hot Box houses the oil bath is containing the borosilicate glass bubblers and all the valving, pipework and mixing manifolds. A nitrogen purge is supplied to this unit from the customer's supply and with an appropriately pure supply (i.e. typically liquid source) and a continuous low flow purge is maintained with a bleed to vent via a relief valve.

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Drybox Emergency Ventilation -The drybox also includes a large bore emergency extract port which is connected to the customer extract system and a manual valve can be opened in the unlikely event that the end user needs to connect extract to the drybox.

The nitrogen inside the dry/hot box is thermostatically controlled allowing the bubblers to operate at elevated temperatures without recondensation of halide vapour in the downstream pipework. Regulation of the dry box heater is by PID control provided by the main MCVD PLC control system.

- 1.1.5 MFCs

Digital MFCs are used for precise flow control. Bronkhorst type EL-Flow Select. Standard accuracy is $\pm 0.5\%$ of reading plus $\pm 0.1\%$ of full scale

- 1.1.6 Gas Channels

Gas channels as follows (mfc flow ranges to be confirmed and are one mfc per channel unless otherwise specified. MFCs are normally closed type manufactured by Bronkhorst (type EL-Flow Select.) MFCs are digital and have an accuracy equal to or better than $\pm 3\%$:

Gas channels as follows (alternative flow ranges can be provided on request):

- O2 carrier (purge gas - none) 0-1000 sccm
- O2 (SiCl4 High) (purge gas - N2) 0-500 sccm
- O2 (SiCl4 Low) (purge gas - N2) 0-200sccm
- O2 (GeCl4 High) (purge gas - N2) 0-500 sccm
- O2 (GeCl4 Low) (purge gas - N2) 0-100 sccm
- O2 (POCl3 High) (purge gas - N2) 0-1000 sccm
- O2 (POCl3 Low) (purge gas - N2) 0-100 sccm
- SF6 (purge gas - N2) 0-100 sccm
- SIF4 (purge gas - N2) 0-200 sccm
- He (purge gas - N2) 0-500 sccm
- Cl2 (purge gas - N2) 0-500 sccm
- N2 (purge gas-none) 0-1000 sccm

The non-bubbler channels are switched by pneumatic bellows valves on the MFC gas panel. All these gases are provided with an on/off function downstream of the MFC. Corrosive toxic gas channels such as chlorine are equipped with local nitrogen/gas switching upstream and run/vent switching downstream of the MFC. Check valves are provided where necessary to ensure no back-streaming occurs of corrosive/toxic reagent gases into carrier gas lines.

Valving and connections are provided for gas flow sampling of all channels for volumetric flow calibration.

- 1.1.7 Gas system pipework/valves

Gas system pipework/valves are 316 stainless steel. Drybox pipework/valves which are "wetted" by SiCl4/GeCl4/POCl3 vapour are teflon/FEP. Bubblers are borosilicate. Piping is electropolished.

- 1.1.8 Manual Isolation Valves and Inlet Filters

16.03.2024

All gas lines are fitted with manual isolation valves and inlet particle filters of 0.1 micron or better and are sited upstream of the MFCs.

- 1.1.9 Cabinet Ventilation

The cabinet housing the stainless steel pipework, valves and MFCs is ventilated by connecting a spigot located at the top of the cabinet to the Buyer's factory extract system to ensure the cabinet remains under slight negative pressure.

- 1.1.10 Bubbler Refilling Manifolding and Pipework

Bubbler refilling manifolding and pipework. The bubblers for SiCl₄, GeCl₄ and POCl₃ are fitted with manifolding and pipework to allow automatic or manual bubbler filling (automatic bubbler filling requires the purchase of and SGC Bulk Store/Bubbler Refilling System which is not part of the MCVD specification but could be purchased at some later stage if required.) Manual filling of bubblers can be undertaken by connecting teflon pipe to the liquid output connection on the bulk vessels in which the chemicals are purchased and connecting the pipe to the relevant teflon to the relevant bulkhead fitting on the MCVD drybox roof. The MCVD SCADA system then provides access to control the relevant valves inside the drybox associated with bubbler filling.

- 1.1.11 Pneumatics for Gas System

The gas inlet for pneumatics is fitted with a local regulator with integral filter. Additionally, pneumatics pressure is monitored by a low pressure switch and should it fall below a preset level an alarm is sounded and event logged. Valves can also be operated directly from the valve terminal or through test screens provided on the operator interface. Unauthorised access to direct manual actuation of valves is prevented by lockable doors on the MCVD control bay housing the valve terminal panel and by password protection on test screens.

- 1.1.12 Port for MFC Flow Checking

A pipe loop is provided which when broken allows MFC flows to be directed to the Buyers flow checking equipment. Note N₂ only should be used for flow checking MFCs and the appropriate correction factor then applied to the reading.

- 1.1.13 N₂ Purges

N₂ purges for the rotary seal, pressure transducer, vent manifolds and lathe line purge utilise rotflow (ie ball in tube) type flow meters.

N₂ can also be switched in into all the gas lines from a common supply so that they can be kept swept when not in use. For SF₆, SiF₄, He and Cl₂ lines the N₂ can be switched individually. For lines carrying O₂ the N₂ is switch globally.

- 1.1.14 Addition of a Point of Use Gas Drier for Purging MFC lines with N₂

At the request of the Buyer a point of use cartridge drier is added to the main N₂ line of the gas system from which the various lines are tee'd in a way which allows N₂ to be feed to the MFC's for purging purposes when the machine is not running process. The drier is passive and does not require heating. Regeneration requires the unit to be returned to the manufacturer. Nominal flow

16.03.2024

capacity is 4.8 slpm and max flow is 10 slpm.

- 1.1.15 Addition of a Point of Use Gas Drier (Qty 1) for O₂ for Carrier Gas and Bubblers

O₂ Drier #1 At the request of the Buyer a point of use cartridge drier is added to the main O₂ line of the gas system from which the various lines are tee'd which feed the SiCl₄, GeCl₄ and POCl₃ bubblers with O₂ and the O₂ carrier channel.. The drier is passive and does not require heating. Regeneration requires the unit to be returned to the manufacturer. Nominal flow capacity is 4.8 slpm and max flow is 10 slpm.

- 1.1.16 Addition of Dew Point Moisture Sensors for Monitoring and Digitally Displaying Moisture Level in the Main Feed Line for O₂ and N₂
- 1.1.17 The gas/vapour mixture produced within the gas system is transferred to the lathe rotary joint by a heated coaxial umbilical line which is N₂ purged.

1.2 MCVD LATHE comprising:

- 1.2.1 Bed Length

Lathe with extended bed length giving maximum 1900 mm between heat shields. Tube lengths in excess of 1000 mm can be accommodated.

- 1.2.2 Motor Drive Systems for Burner Carriage, Chuck Rotation and Driven Tailstock

Precision drive systems with encoder feedback for main burner carriage, tailstock and chuck rotation. For process operation burner carriage speeds may be programmed up to the same speed as is used for fast traverse ie 0- 3000 mm/min. Speed increments of 1 mm/min and smaller are settable.

The burner carriage is interlocked with limit switches to prevent collision with the headstock and tailstock heat shields.

The burner carriage may be operated in both forward and reverse directions to support deposition in both upstream and downstream directions.

Chuck rotation speeds 0-100 rpm. Direction of chuck rotation is settable via the operator interface.

The driven tailstock provides the capability for preform stretching/squashing.

- 1.2.3 Driven Tailstock (Allows Stretching/Squashing Process Operations)

The tailstock has a bidirectional drive to allow preform stretching/squashing operations. Fitted with supplementary drive disengage clutch and tailstock hand wheel to allow glass working to be carried out in the conventional way. The driven tailstock is interlocked with limit switches to prevent over travel or collision with the main burner carriage.

- 1.2.4 Chucks

Three jaw single scroll chucks at headstock and tailstock. Each chuck has a through bore of 52 mm and can clamp onto tubes/rods as small as 10 mm diameter ie inlet handle tube of diameter OD 20+/-2 mm and collector tube of diameter OD 28-45 mm can be gripped without problem.

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Page 40 of 40

- 1.2.5 Chuck Heat Shields

Chucks are protected with stainless steel heat shields with interchangeable inserts sized according to glass tube diameter. One set of inserts to an agreed size included as standard.

- 1.2.6 Main Burner

Main Burner is a "half ring" water cooled stainless steel matrix burner with N₂ gas curtains for flame profile adjustment. Main burner fuel gases controlled by MFCs. Gas curtains controlled by rotoflow ball in tube type flow meter. Flame arrestors are provided where necessary. The burner is suitable for processing a range of substrate tube geometries including tubes with outside diameter in range 14-22 mm.

- 1.2.7 Loss of Cooling Water Interlock

An interlocked water flow switch is provided such that in the event of insufficient or complete cooling water failure the main burner will be automatically extinguished, the process switched to a safe state and an alarm sounded.

- 1.2.8 Lathe Carriage Control

The lathe carriage is controlled by a precision motor with encoder control linked to the PLC. Carriage motion is both under recipe control and can also be moved locally by joystick.

- 1.2.9 No Flame Detection

An Interlocked "No flame" detection system for the main burner. The flame detection system will automatically cut off the fuel gases in the event of a flame out condition being detected and an alarm will alert the operator and the event is datalogged.

- 1.2.10 Rear (Tailstock) Burner

A rear (Tailstock) pilot jet burner (H₂) with a needle valve for flow control is provided for heating the joint between the preform substrate tube and the soot trap

- 1.2.11 Front (Headstock) Burner

A front (Headstock) pilot jet burner (H₂) with a needle valve for flow control is provided for heating the joint between the preform substrate tube and the inlet handle. A manual isolation valve is provided after the needle valve.-

- 1.2.12 Hand Torch

Pressure regulation and manifolding is provided for a hand torch and a hand torch is included in the scope of supply. The lines include flame arrester.

- 1.2.13 Pneumatics for Lathe

The gas inlet for lathe pneumatics is fitted with a local regulator with integral filter. Additionally, pneumatics pressure is monitored by a low pressure switch and should it fall below a preset level an alarm is sounded and event logged. Valves can also be operated directly from the valve terminal or through test screens provided on the operator interface. Unauthorised

16.03.2006

access to direct manual actuation of valves is prevented by lockable doors on the lathe base area housing the valve terminal panel and by password protection on test screens.

1.2.14 Pyrometer

An IMPACT IN 5/5-L plus pyrometer operating at 5.14 microns is provided to measure the temperature of substrate tubes with an accuracy of ± 10 deg C during processing. Temperature range of the pyrometer is at least 700-2500 Deg C. The pyrometer has necessary cooling system.

1.2.15 Pyrometer Scanning

The pyrometer is mounted to a motorised pivoting stage which allows the pyrometer to be driven in an arc along the centre axis of the substrate tube. A manual tilt adjustment is also provided to ensure the pyrometer is looking at the centre of the tube. The control system allows a mode of operation to be selected where pyrometer position automatically changes according to the speed of the burner carriage to compensate for the varying lag of the hottest part of the tube compared to the burner position. The speed versus lag characteristics can be set by the operator and saved as lookup tables. Multiple look up tables can be saved and invoked via the recipe scheme. The lathe will support deposition in both upstream and downstream directions.

1.2.16 Burner Control

The main burner is lit using a pilot flame. H₂/O₂ flows used for the pilot flame are switched off once the main burner is lit. Closed loop temperature control varies both H₂ and O₂ flows whilst mainlining a preset H₂/O₂ ratio set as part of the recipe. Additionally, fixed H₂ and O₂ flows can be set and this mode is normally used for collapse.

The recipe system allows multiple strategies to be employed to avoid overshoot at the start of a pass such as starting the warm up using fixed flows with an automatic switch over to closed loop control once a "switch" temperature is reached overlaid with time or temperature conditions being met before burner movement starts which may be either fixed speed or position dependent speed ramp.

1.2.17 Automatic Soot Removal System and Preform Substrate Pressure Control

This is used in conjunction with the standard tailstock extract chamber, the system removes soot generated during deposition whilst maintaining a controlled pressure within the substrate tube. Therefore, operator interaction is significantly reduced and the degree of process automation greatly increased. In addition, the ability to regulate internal pressure during deposition allows undesirable collapse of the substrate tube to be reduced thus improving process control especially during deposition.

The system is based around a special contra-rotating quartz injector which injects nitrogen via an MFC ("sweep" MFC) into the soot trap entraining and removing oxide soot particles that would otherwise collect and block the tube. Pressure control is maintained within the substrate tube by sensing internal tube pressure using a pressure transducer which is situated in the Gas Control System. Higher pressures needed for tube diameter control are provided by means of a second MFC ("Soot box" MFC) which directs a nitrogen jet at the annulus between the soot trap and the contra rotating quartz injector which provides a resistance to the outflow of the injector N₂ hence increasing the pressure inside the substrate tube. To ensure that the annulus is of optimum cross section for pressure generation and control the soot trap diameter and injector diameter must be properly matched. The Seller can advise the optimum soot trap size based on his standard injector. The pressure sensor may be switched for monitoring at tailstock or headstock and is used in conjunction with PID pressure control provided by the PLC which regulates the

output of the sweep MFC to maintain the pressure set point during the deposition phases and the pre seal off collapse phases both of which utilise tailstock pressure monitoring. For the final reverse seal pass tailstock pressure monitoring is continued until the pressure rises above a preset threshold deemed to be consistent with tube seal off which then automatically triggers a switch to headstock pressure monitoring and the opening of a bypass valve to allow gases being passed down the tube to escape. The wetted parts of the pressure sensor are constructed from chemically resistant materials in conjunction with a continuous N₂ purge. Note that if required the operator may disable the auto seal off pressure switching if required and may take the decision manually.

Vented nitrogen, soot particles and exhaust gases are captured at the end of the handle tube in the compact UPVC extract chamber which is connected via a spigot to the fume exhaust system. The injector is rotated via a variable speed motor to assist the soot removal process. Parts of the injector in contact with corrosive fumes are fabrications from quartz and PTFE and are connected to the rotation drive and rotating gas seal assembly via a coupling.

The rotation drive/seal assembly is mounted to the tailstock via telescopic support pillars and may be tilted off the tube axis. By releasing the injector coupling and withdrawing and tilting the drive assembly the quartz injector may be removed to allow easy mounting and demounting of the tailstock handle tube.

1.2.18 Tube Diameter Control System with Camera

Tube Diameter Control System with Camera (works in conjunction with autosoot removal system and standard preform pressure control system. This system is used to control the diameter of the preform during the deposition phase at a preset value using the pressure control system. Note that the system uses pressure to increase diameter or to suppress shrinkage. If diameter is oversize the rate of correction will be determined by the natural tube shrinkage rate available for the conditions current at that time and the control system will apply progressive shrinkage to minimise the risk of rippling. Preform diameter is displayed and logged in real time and a dedicated flat panel monitor is provided for displaying the camera image.

1.2.19 Rotary Joint

Rotary joint capable of being used with input handles of 30 mm diameter using the appropriate adaptor. Supplied with one adaptor for one nominated diameter of input handle (nominated size to be agreed within the size band range for inlet tube diameter OD 20 mm +/- 2 mm). Additional adaptors for different tube sizes available as spare parts. The supplier confirms that glass tubes within the diameter range 14 -30 mm OD can be accommodated without problem.

1.2.20 Lathe Local Control Box

Local control box mounted to lathe carriage for manual carriage control and manual burner flow control for use during tube joining and set up operations.

1.2.21 Draw Bar

A 20 mm diameter stainless steel draw bar is provided to assist in tube setting up. This runs between headstock and tailstock and is supported on clamps at both ends. A set of 2 carbon paddles are supplied with clamps for mounting onto the draw bar. The draw bar is also useful for mounting other accessories which may be employed in an R & D environment.

1.2.22 Suitability for Future Addition of a High Temperature Sublimator System Using Rare Earth Chelates

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At the request of the Buyer the machine is configured to allow a later addition of a High Temperature Sublimator System Using Rare Earth Chelates.

1.3 PC/PLC Control System with Allen Bradley PLC, PC and monitor.

- Operator interface is via the PC with machine control via the PLC (Allen Bradley/Rockwell Compact Logix) which allows the process to continue even if the PC crashes. The SCADA utilises Allen Bradley/Rockwell FactoryTalk SE which is custom programmed for the MCVD application running on MS Windows 10.
- Includes a comprehensive recipe generator/editor. (The standard editor provides all the facilities likely to be required but since the Seller codes the software in house there is some possibility of customisation with mutual agreement). Parameters may be linearly ramped and such parameters include carriage speeds, MFC flow rates, burner temperature, headstock and tailstock pressure. Ramp functions are applicable for both forward and reverse pass directions.
- Two access levels with password protection are provided each with increasing access to features ie Operator, Engineer and Supervisor.
- Three machine modes are provided ie Standby -safe state for overnight/weekends. Manual - for tube set up and other ancillary operations. Auto - for running under recipe control.
- Full manual intervention is possible whilst process is running enabling the parameters of the current or future process steps to be amended seamlessly.
- The system includes comprehensive data, event and alarm logging databases which can be exported to Windows compatible software.
- Real time trending of critical parameters such as burner temperature, burner speed, pressures, bubbler temperatures is provided with a scrolling window of at least 20 minutes of data.
- Recipes are saved to an on board database and can be exported to Windows compatible software. Recipes are designed to be constructed using MS Excel (Buyer to supply Excel as Seller is prohibited by MS to buy in UK for export).
- Spare inputs on the PLC are included for interfacing with other components at some later time.
- Remote interrogation for diagnostic and technical support of the control system and remote software updating is possible via the internet.
- A local control box is mounted to lathe carriage for manual carriage control and manual burner flow control for use during tube joining and set up operations.
- One flat panel 22 inch colour monitor is provided. A second 22 inch monitor is provided to give a dedicated display for the tube diameter camera system.

The main MCVD computer will have the following specification as a minimum

- Quad core Intel CPU Core i5 or better
- Current motherboard and graphics card
- At least 16 GB of RAM

3412P 16.03.2024
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196, राजा एस. सी. मल्लिक रोड / 196, Raja S.C. Mullick Road
कोलकाता / Kolkata-700 032

- 1 free Gigabit Ethernet port (copper) to connect the computer to Buyer's network
 - SCADA to operate on Microsoft Windows 10 Pro English, 64 bits
 - PC and operating system has long term support
 - Includes keyboard and mouse
- Emergency stop buttons are provided to put the machine into a safe state. The machine will also go into a safe state in the event of power failure. Three additional inputs are provided to accept volt free contacts from the Buyer's factory services or safety systems which on actuation will also take the machine to a safe state. Such inputs are envisaged as for example scrubber fail, gas detection, fire.

1.4 Installation and Commissioning

The Seller will provide supervision for the installation and commissioning of the MCVD system. The installation/commission period will be in excess of 7 working days and will culminate in the manufacture of at least one of each of two preform types ie one for standard singlemode fibre and one for multimode fibre having a core diameter of 25 – 30 μm with NA of either 0.07 ± 0.01 or 0.20 ± 0.01 based on the suitable selected recipe. The Buyer shall provide the recipes for the same and the Seller may modify as required.

Sketch/drawing of the space along with the approximate area, electrical and civil-related information to be provided just after receiving the Purchase order for the preparation of the room for installation.

1.5 Training

The Seller will provide training to at least two of the Buyer's Scientists and separately at least two of the Buyer's Technical staff in the running of the machine. This training will be conducted at CSIR-CGCRI site during the installation and commissioning period.

1.6 Warranty

Warranty shall be 12 (twelve) months from date of completion of successful installation and commissioning of the machine.

The installation/commissioning/demonstration will be done by the supplier in several different phases as mentioned below:

1. Phase 1 is the unpacking, siting and reattachment of items removed for transit. Typically this will take 1 week.
2. Phase 2 can then commence where the machine will be made available for the Purchasers contractors to make the service connections to the machine. Given that this can involve high purity pipework for multiple gases and leak checking Phase 2 service hookup can take 1-2 weeks typically assuming the purchasers contractors are available to start immediately.
3. Phase 3 commences after service connections are made and involves basic tests of functionality followed by a period of purging with N_2 to dry down the system which is a prerequisite before any filling with live chemicals can take place. The drying process cannot be accelerated and takes a minimum of 1 week.
4. Phase 4 involves the introduction of live process gases and the filling of the bubblers with the high purity reactive chemicals after which commission test are undertaken. Phase 4 can take 1 week.
5. Phase 5 involves running process to calibrate the system followed by the undertaking of demonstration tests. Fabrication of any preform will typically take 1 day followed by the time required for off line measurement etc. Phase 5 calibration trials and demonstration could take 1 - 2 weeks.

30/03/2024
16.03.2024

अंजनी कुमार पाण्डेय / Anjani Kumar Pandey
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SCOPE OF SUPPLY

Activity	Responsibility
To prepare the laboratory area appropriate to MCVD process including provision of all required gas, water, extract (normal and scrubbed) and power close to the designated hook up points on the equipment prior to the arrival of the Sellers engineer on site.	CGCRI
To supervise the unpacking and siting of the equipment	SGC
To provide appropriate labour and lifting equipment associated with unpacking and siting the equipment	CGCRI or CGCRI Contractors
To make the final service connections to the machine to conform to local regulations/building insurance	CGCRI or CGCRI Contractors under the supervision of SGC
Provision of all raw materials/gases needed for installation/commissioning and acceptance trials	CGCRI
To install the machine	SGC with assistance from suitably qualified CGCRI engineers on as needed basis
To commission the machine - early phases	SGC
To commission the machine - later phases	SGC and CGCRI process personnel working together as part of their training
Pre acceptance Process Optimisation Trials	SGC and CGCRI Process Engineers working together as part of their training
Acceptance Tests	SGC and CGCRI Process Engineers working together as part of their training
Provision of "recipes" for pre acceptance and acceptance tests to meet the specification required by CGCRI along with the drawing of preforms into fibre and measurement and testing of both preform and fibre.	CGCRI. SGC will give input on possible modifications to CGCRI provided recipes based on pre acceptance test results to jointly agree how recipes will be optimised.

16.03.2024

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PERFORMANCE SECURITY FORM

MODEL BANK GUARANTEE FORMAT FOR PERFORMANCE SECURITY

To,

.....
WHEREAS (name and address of the supplier) (hereinafter called "the supplier") has undertaken, in pursuance of contract No. datedto supply (description of goods and services) (herein after called "the contract").

AND WHEREAS it has been stipulated by you in the said contract that the supplier shall furnish you with a bank guarantee by a scheduled commercial bank recognized by you for the sum specified therein as security for compliance with its obligations in accordance with the contract;

AND WHEREAS we have agreed to give the supplier such a bank guarantee;

NOW THEREFORE we hereby affirm that we are guarantors and responsible to you, on behalf of the supplier, up to a total of (amount of the guarantee in words and figures), and we undertake to pay you, upon your first written demand declaring the supplier to be in default under the contract and without cavil or argument, any sum or sums within the limits of (amount of guarantee) as aforesaid, without your needing to prove or to show grounds or reasons for your demand or the sum specified therein.

We hereby waive the necessity of your demanding the said debt from the supplier before presenting us with the demand.

We further agree that no change or addition to or other modification of the terms of the contract to be performed there under or of any of the contract documents which may be made between you and the supplier shall in any way release us from any liability under this guarantee and we hereby waive notice of any such change, addition or modification.

This guarantee shall be valid until the day of, 20.....

(Signature of the authorized officer of the Bank)

.....
Name and designation of the officer

.....
Seal, Name & Address of the Issuing Branch of the Bank

Note: Whenever, the bidder chooses to submit the Performance Security in the form of Bank Guarantee, then he should advise the banker issuing the Bank Guarantee to immediately send by Registered Post (A.D.) an unstamped duplicate copy of the Guarantee directly to the Purchaser with a covering letter to compare with the original BG for the correctness, genuineness, etc.

ACCEPTANCE CERTIFICATE FORM

No. _____

Dated: _____

M/s. _____

Sub: Certificate of commissioning of equipment

01. This is to certify that the equipment as detailed below has/have been received in good condition along with all the standard and special accessories (subject to remarks in Para 2). The same has been installed and commissioned.

- (a) Contract No. _____ Date _____
(b) Description of the equipment _____
(c) Name of the consignee _____
(d) Scheduled date of delivery of the consignment to the Lab./Instts. _____
(e) Actual date of receipt of consignment by the Lab./Instts. _____
(f) Scheduled date for completion of installation/commissioning _____
(g) Training Starting Date _____
(h) Training Completion Date _____
(i) Names of People Trained _____
(j) Actual date of completion of installation/commissioning _____
(k) Penalty for late delivery (at Lab./Instts. level) ₹ _____
(l) Penalty for late installation (at Lab./Instts. level ₹ _____

Details of accessories/items not yet supplied and recoveries to be made on that account:

Sl. No.	Description	Amount to be recovered

02. The acceptance test has been done to our entire satisfaction. The supplier has fulfilled his contractual obligations satisfactorily

or

The supplier has failed to fulfil his contractual obligations with regard to the following:

- (a)
(b)
(c)
(d)

The amount of recovery on account of failure of the supplier to meet his contractual obligations is as indicated at Sr. No. 3.

For Supplier

Signature

Name

Designation

Name of the firm.....

Date

For Purchaser

Signature.....

Name.....

Designation.....

Name of the Lab/Instt.....

Date.....

FORM OF NO CLAIM CERTIFICATE
(On company letterhead)

To,

Name & Address of CSIR Labs/Instts _____

Attention:

NO CLAIM CERTIFICATE

Sub: Contract Agreement no.dated for the supply of

We have received the sum of Rs. (Rupees only) in full and final settlement of all the payments due to us for the supply of under the abovementioned contract agreement, between us. We hereby unconditionally and without any reservation whatsoever, certify that with this payment, we shall have no claim whatsoever, of any description, on any account, against afore said contract agreement executed by us. We further declare unequivocally, that with this payment, we have received all the amounts payable to us, and have no dispute of any description whatsoever, regarding the amounts worked out as payable to us and received by us, and that we shall continue to be bound by the terms and conditions of the contract agreement, as regards performance of the contract.

Yours faithfully,

Signatures of Supplier or
Officer authorised to sign the contract documents
on behalf of the supplier
(company stamp)

Date:

Place: