सीएसआईआर- भारतीय रासायनिक प्रौद्योगिकी संस्थान
CSIR-Indian Institute of Chemical Technology
आई. एस. ओ. 9001 संगठन (विश्लेषणात्मक परिसेवा हेतु) /ISO 9001 Organization (for Analytical Services)
(वैज्ञानिक तथा औद्योगिक अनुसंधान परिषद) / (Council of Scientific and Industrial Research)
तारनाका, उप्पल रोड़, हैदराबाद. तेलंगाना राज्य, भारत. 500 007.
Tarnaka, Uppal Road, Hyderabad. Telangana State, India. 500 007

No. PUR/IICT0759/24-25/EQPT **Dt. 28-08-2024**

CPPP Id No. 2024_CSIR_205012_1

Corrigendum- 1

Sub: Revised/Final Specifications for Advanced Gas Chromatography Equipment with FID &TCD detectors subsequent to the Pre-bid Conference (PBC) held on 22-08-2024

All the bidders are requested to kindly take a note of the enclosed revised specifications subsequent to the PBC and submit the quote accordingly. The minutes of the PBC has already been uploaded in CPPP.

All other terms & conditions of the tendered document remain unchanged and bidders are advice to submit their bid positively on or before 11-09-2024.

28.08.2024

(Dharmendra Kumar)
Controller of Stores & Purchase

दूरभाष/Tel: +91-40-27193461, 27193228; फैक्स/Fax: +91-40-27193147
ई-मेल/ Email: cosp@iict.res.in; csiriictnyd@csiriict.in वेबसाईट/ website:www.iictindia.org

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CPPP Tender ID : 2024_CSIR_205012_1

Revised Technical Specifications for "Advanced Gas Chromatography equipment with FID & TCD detectors" as per PBC Meeting

Advanced Gas Chromatography System (GC) equipped with Flame Ionization Detector (FID) and Thermal conductivity detector (TCD) for gas/liquid sample analysis with all the standard accessories, capillary & packed inlets, and automated valco valve for online gas analysis. The Gas Chromatograph system should be controlled by the latest software for accurate control of pressure/flow settings of inlets and detectors. The model quoted should be of the latest configuration by the company. The clear model number along with design of the GC system should be included in the quotation and literature/standard broacher. Detailed specifications for each component is described below:

S. No.	Component	Specifications
1	**GC system:** Gas and Liquid analyser system for online and offline analysis	▪ Programmable Temp controlled Column oven ▪ Advanced / Electronic Flow controller for rapid response and temp correction functions/ Highly precise electronic pneumatic control (EPC) or pneumatic pressure control (PPC) or digital pressure control (DPC) or advanced flow controller (AFC) for injectors, detectors and auxiliary gases controllable through input keyboard or GC software. ▪ The precise pneumatics and temperature control must be evident with chromatographic performance of the instrument. ▪ Facility to install up to 3 detectors simultaneously ▪ 2 injectors with gas-liquid ports & 1 gas sampling valve. ▪ Column oven to achieve ultimate repeatability for retention time, peak area & peak height etc with Flame ionization Detector & Thermal conductivity Detector ▪ Highly precise retention time repeatability (< 0.0010 min or better) ▪ Area repeatability (< 2%RSD or better), full EPC for all inlets and detectors. ▪ Flow or pressure set point parameter for each inlet/injector or detector should be displayed on screen. ▪ Automatic control of split vent, automatic setting of split flow rates and split ratios by software. ▪ All the parts of the system with part number/ serial no. should be included
2	**Column Oven**	• Temperature Range: Room Temp to 400 °C • Oven Capacity: 13L or more • Temp Accuracy: ±1% • Temp Deviation: <2° C max • Ambient rejection: <0.01°C/ 1°C

		• Temp Prog Steps: 20 ramps with 21 isothermal hold or better. • Total time for all steps: 9999.99 min • Oven Cooling Time: 400 to 50 ° C within 6 min or better
3	**Sample Injection Unit**	• Split / Splitless injection unit –1no. • Single Packed Injection unit – 1no. • Temp range: up to 400 ° C.
4	**Carrier Gas Flow controller with dual Advance Flow Controller**	For Packed: • Flow rate setting range: 0-100ml/min • Maximum operating temperature: 400 °C • Correction function: maintains column flow rate during column oven Heating For Capillary Split / Splitless : • Correction function: maintains column flow rate during column oven Heating • Split/splitless Injection Mode • Pressure Setting range:0-970kPa • Split ratio setting: 0 – 9999.9 • Total Flow rate Setting range:0-1200ml/min • Maximum operating temperature: 400 °C • Correction function: maintains column average linear velocity during column oven Heating.
5	**Automated Valco Valve for online-analysis**	• No of Valves: 6 Port -1 No • Loops: 0.5mL, 1mL, 2mL & 5mL
6	**Detector type**	**Flame Ionization Detector (FID):** • FID – for packed & capillary application • Temperature range: up to 400 ° C or better • Minimum detection quantity: 3pgC/s (dodecane) or better • Dynamic range: $>10^7$ or better • Max acquisition rate: 4 ms (500 Hz) or better • Automatic flame out detection and reignition **Thermal Conductivity Detector (TCD):** • Temperature range: up to 400 °C or better • Sensitivity: > 40000 mV × mL/mg (decane) or 400 pg/ml or better • Dynamic Range: 1×10^5 • Max acquisition rate: 4 ms (250 Hz) or better
7	**Complete System Control and Data Acquisition Software**	• 64-bit Software Compatible with Windows 11 or higher operating system with 14th generation or higher, 8 GB RAM, 1TB SSD, DVD RW multi with 24" LED monitor, Keyboard, USB mouse along with all original operating system • Software should have had Security (log-in, User and group) • System Suitability test as standard functions

		• System Check: Automatically checks all the system parameters including electronics • Flexible Report format., i.e., for Method, chromatogram, Peak table, Quantitation result Calibration curve, Status Log, texts, graphics. • Ease of Operation Single Point user friendly access through Icons. • Real time Display of all Chromatograms with Data exchange facilities. • Software has Calibration Facility with Bracketing without Overlap and Bracketing by Grand average • Built-in weekly Scheduler for automation the system for one complete week in addition daily automation.
8	**Essential Accessories**	a. **Columns:** • Capillary Column: Stable Wax / One plot Q capillary column/ one MXT max column or Equivalent-30 mtrs length • Packed Column: Carbosil Column 2mtrs • Packed Column: Carboxane Column 2 mtrs b. Latest Laser Printer c. Gas cylinders, Regulators & Gas Purification Panel Set: Gas cylinder- 47 lit (H2, N2, He & Zero Air- 1 no. each) with dual stage SS regulator & gas purifier with accessories. d. At least 10 ferrules of each required sizes and 100 Nos. of low bleed septa for GC inlet. e. Column inlet & outlet nuts: 2 pkts. f. Nuts, ferrules, spanners, tube cutter, screwdrivers, wrench and SS tubing for carrier connection into GC. g. one bottles snoop leak detector and one glass wool. h. Liners for S/SL inlets (3 no). i. Gas tight syringe for gas samples for 500 µL/ 2 no's and 2ml – 2 no's j. Liquid syringe for liquid samples for 10 µL 10 no. each
9	**Warranty**	• Supplied Instrument should have 3 years comprehensive warranty along with spare parts

R. Kaur

10	**Terms and conditions for instrument**	• The supplier must provide installation, commissioning and complete training to users without any additional cost and supply relevant operating and servicing manuals in printed and soft formats. • The supplier must demonstrate that they have appropriate setup and capability to provide after sales technical support and timely servicing of the instrument. • The tender document MUST enclose valid standard specification documents from the company and every specification must be a part of that standard document. • A satisfactory performance certificate from minimum 3 or more users of the above must be submitted for performance evaluation.

R. Garg