

File Ref. No. PUR/IICT/DMS/533/RE/23-24  
CPPP Tender ID : 2023\_CSIR\_177951\_1

Dt: 22-12-2023

Minutes of Pre-Bid Conference (PBC) held on 22-12-2023 for proposed procurement of  
"SUPPLY INSTALLATION COMMISSIONING OF MICRO GC" -

Chairpersons / Members of the Technical Sub Committee (TSC) present during PBC  
including domain experts present during PBC:-

1. Dr N Lingaiah Chairman
2. Dr. Pratyay Basak, Member
3. Dr. Jithender Reddy, Member
4. Dr Sreepariya Vedantam, Member
5. Shri D Venkateshwar Rao, Member
6. IO/PL – Dr. C. Sumana

Representatives of the following firm attended the PBC:

1. M/s. Camtek Labs, Uppal, Hyderabad
2. M/s
3. M/s
4. M/s
5. M/s

The following points were discussed during the PBC:

Query raised by M/s. Camtek Labs, and response of CSIR-IICT:

Query-1: Request to amend the specs as shown in the table below

S.No.	Parameter	IICT spec	M/s.Camtek Labs request	IICT response
1	Injector	Variable Injection Volume (1-20uL)	We request u to modified as 1-10 uL	Agreed
2	Sampling	Independent SS valco (heated 300oC) 1/16" gas sampling valves with replaceable SS filters and electronic actuator compatible with TCD detectors	Built in stainless steel Valco fitting with replaceable 5 µm stainless steel filter and electronic actuator compatible with TCD detectors.	Agreed

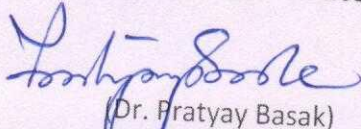
Points clarified by CSIR-IICT Team during PBC:

The firm informed that they do not have problem with other points of tendered specifications and requirements. Participating bidders have been informed that points raised by them during PBC will be examined by CSIR-IICT's **Technical Sub Committee (TSC)** constituted for the purpose of procurement of said equipment and **post PBC changes** in tendered specifications and requirements to be agreed after due consideration of the same

L. Subash  
22 Dec 2023

by TSC, if any, will be uploaded in **CPPP** as part of **revised/amended tendered specifications**.

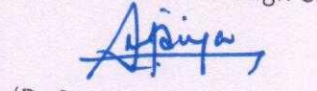
Minutes of the PBC with changes agreed (if any) will be uploaded in due course at **CPPP** for information and reference of prospective bidders on or before **29-12-2023**. All bidders are requested kindly to take a note of changes in tendered specifications subsequent to PBC held today, i.e. 22-12-2023 before they start submitting their online bids through CPPP.

  
(Dr. Pratyay Basak)

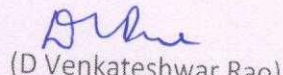
Member

  
(Dr Jithender Reddy)


Member

  
(Dr Sreepriya Vedantam)

Member

  
(D Venkateshwar Rao)

Member

  
(Dr. C. Sumana)

IO/PL

  
(Dr. N Lingaiah)

Chairperson

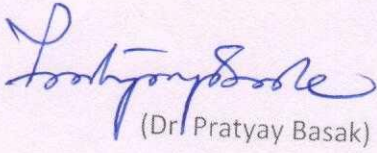
Revised Specifications/Corrigendum

File Ref. No. PUR/IICT/DMS/533/RE/23-24

Dt 22.12.2023

- Spec No. 5  
Injector: Variable injection volume (1-10  $\mu$ L)
- Spec No. 12  
Sampling: Built in stainless steel Valco fitting with replaceable 5  $\mu$ m stainless steel filter and electronic actuator compatible with TCD detectors.

All the other tender terms remain unchanged. Bidders may please submit their bids accordingly.

  
(Dr. Pratyay Basak)

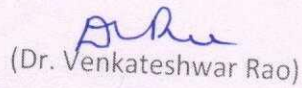
Member

  
(Dr. Jithender Reddy)

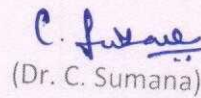
Member

  
(Dr. Sreepriya Vedantam)

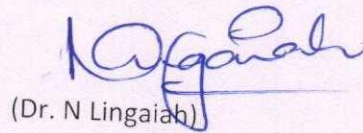
Member

  
(Dr. Venkateshwar Rao)

Member

  
(Dr. C. Sumana)

IO/PL

  
(Dr. N Lingaiah)

Chairperson

## TECHNICAL SPECIFICATIONS OF MICRO GC (Revised)

S.No	Parameter	Specifications
1	Sample Analysis Time	Analysis time between two consecutive samples must be less than or equal to 3 minutes
2	Analysis Specifications	<p><b>Scenario 1:</b> CO<sub>2</sub> concentration in air ranging from 10-500 ppm</p> <p><b>Scenario 2:</b> CO<sub>2</sub> concentration in N<sub>2</sub> &amp; CO<sub>2</sub> mixture ranging from 0.1-20 vol.%</p> <p><b>Scenario 3:</b> Multiple gas concentrations in a gaseous mixture of CO<sub>2</sub> (0.1-20%), CO (0.1-20%), CH<sub>4</sub> (0.1-50%), H<sub>2</sub> (0.1-50%) and N<sub>2</sub> (0.1-100%)</p> <p>In all scenarios RSD must be less than 0.5%</p>
3	Configuration	2 independent channels for analyzing: (a) H <sub>2</sub> , N <sub>2</sub> , CO and (b) CO <sub>2</sub> , CH <sub>4</sub> , C <sub>2</sub> H <sub>6</sub> , C <sub>2</sub> H <sub>4</sub> , C <sub>2</sub> H <sub>2</sub>
4	Control	Independent controls for each analytical channel including pneumatics, time-based column pressure programming and column backflush facility
5	Injector	Variable injection volume (1-10 µL) Software controllable injection time Injector heating up to 100°C with optional backflush facility
6	Oven	Temperature Range: Ambient to 180°C Temperature set point resolution of 0.1°C or better
7	Columns	2 independent columns (5-10 m length) for analyzing (a) H <sub>2</sub> , N <sub>2</sub> , CO (column 1) and (b) CO <sub>2</sub> , CH <sub>4</sub> , C <sub>2</sub> H <sub>6</sub> , C <sub>2</sub> H <sub>4</sub> , C <sub>2</sub> H <sub>2</sub> (column 2)
8	Carrier Gas	Capable to handle input carrier gases such as H <sub>2</sub> , N <sub>2</sub> , He and Ar (540-560 kPa) with adequate fittings
9	Detectors	Two independent Micro-machined Thermal Conductivity Detectors (TCD) with dual flow channels (sample and reference flow) and two filaments
10	Detection Limits	Min: 1-2 ppm and Max: 100% For any of the following gases (CH <sub>4</sub> , CO <sub>2</sub> , CO, H <sub>2</sub> , and N <sub>2</sub> )
11	Repeatability	Retention time repeatability: ≤ 0.001 min Area repeatability: ≤ 0.5 % RSD at constant temperature and pressure
12	Sampling	Built in stainless steel Valco fitting with replaceable 5 µm stainless steel filter and electronic actuator compatible with TCD detectors. Sampling gas temperature: 0-100°C Sample injection through the system software Software supported multi positioning steam selection valves with relay control
13	Software	Compatible software for micro-GC data acquisition, analysis and storage with auto tune and auto calibration features. Instrument data acquisition software update should be provided free of cost for the quoted version.
14	Personal Computer	AMD-Ryzen 9 or Intel I-9, 32-inch Monitor HD Display, 16 GB DDR4 RAM, 4 GB NVIDIA Graphics Card DDR5, 2 TB SSD, USB 3.2 Front/Back, Windows, MS-Office
15	Printer	Laser jet printer
16	Warranty	The warranty period should be a minimum of 2 year
17	Installation and Demo	The equipment and software should be installed at CSIR-IICT and tested to meet the specifications free of cost. Tool kit for regular operation and maintenance should be provided

C. J. J. J.  
22<sup>nd</sup> Dec 2023