Minutes of Pre-Bid Meeting

फाइल क्र. : PUR/EQP/75/(2025-26)

विषय: Fully Automated Chemisorptions Analysis.

A Pre-bid meeting regarding the procurement of the instrument was held on 25-11-2025 from 2:30 PM onwards in the conference room.

Dr Venkata Palla External Domain expert attended the meeting through online mode.

Representatives of two instrument manufacturing companies attended the meeting and their details are given below-

1) M/s Anton Parr India Pvt Ltd, Gurugram, represented by Mr. Anurag Maurya, Mr Sushant Jadav, Dr Rishi Gupta

2) M/s Verder Scientific Pvt.Ltd. Ghaziabad, represented by Mr. Shailender Pal Singh and Mr Roshan Desouza

During pre-bid meeting firm has raised following queries that have been replied by the committee member:

M/s Anton Paar

| S/No. | Annexure Points | Request for amendment | Response |
|-------|---------------------------------------------------------|-------------------------------|-----------------------------------------------------------------|
| 1 | Introduction | To Remove: breakthrough | No Modification |
| | Break through curve | curve measurement | suggested |
| | measurement | | |
| 2 | Point no A (11) | To Remove: "Provision | No Modification |
| | Vapor generator option should | should be available for field | suggested |
| | be accessible for future studies | upgradation in future with | |
| | and supplied with the system | vapor chemisorption." | |
| | | | |
| 3 | Point no A(4) | Sample tubes for | No Modification |
| | The system should be provided | Chemisorption To Reduce | suggested |
| | with suitably designed quartz | Qty- The vendor should | |
| | tube to accommodate various | supply at least 5no. quartz | |
| | catalyst volumes and sizes for | sample tubes. | |
| | use up to 1100 °C. The vendor | | |
| | should supply at least 30 | | |
| | quartz sample tubes. | T | N 1:0 1. |
| 4 | Point no A (7) | Injection gas – To Remove: | Modified to - |
| | System compatibility with He, | Sox | System compatibility |
| | Ar , N_2 , O_2 , H_2 , CO , CO_2 , NH_3 , | | with He, Ar, N ₂ , O ₂ , H ₂ , |
| | N_2O , NO , methane, SO_x , and | | CO, CO ₂ , NH ₃ , N ₂ O, |
| | other corrosive and non- | | NO, methane and other |
| | corrosive gases and their | | corrosive and non- |
| | mixtures as per requirement. | | corrosive gases and |

The Costs within

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| | | | their mixtures as per |
|-----|------------------------------|-------------------------------|-----------------------------------|
| - | D 1 | | requirement. |
| 4 | Point no A (5) | To Remove: | Modified to – |
| | I. The system should be | The system should be | I. The system |
| | having an electrical | provided with rapid cooling | should be |
| | furnace to run | attachment with Cryo. cooler | having an |
| | automatically the | with 25 L liquid Nitrogen | electrical |
| | temperature | Storage capacity | furnace to run |
| | programmed | grange inputs, | automatically |
| | experiment from room | | the temperature |
| | temp to 1100°C or | | programmed |
| | better. | | experiment |
| | II. High-temperature | | from room temp |
| | furnace should provide | | to 1100°C or |
| | quick and accurate ramp | | better. |
| | rates to the desired | | II. High- |
| | temperature with | | |
| | excellent temperature | ~ | temperature furnace should |
| | control and repeatability | | |
| | ± 1 °C, | | provide quick |
| 1 | III. The system should be | | and accurate |
| | | | ramp rates to the |
| | provided with rapid cooling | | desired |
| | attachment with Cryo. cooler | | temperature with |
| | with 25 L liquid Nitrogen | | excellent |
| | Storage capacity. | | temperature |
| | | | control and |
| | | | repeatability ± 1 0 C, |
| | | | III. The system |
| | | | should be provided |
| | | | with rapid cooling |
| | | | attachment with Cryo. |
| | | | cooler with 10 L or |
| | | | more liquid Nitrogen |
| | | | Storage capacity. |
| | , and the second second | | <u> </u> |
| 6,7 | Point no A (8) | I. The system should have 8 | No Modification |
| | I. The system should | or more gas inlet ports, | suggested |
| | have 8 or more gas | Including two ports for | |
| | inlet ports, Including | corrosive gases. 5 gas inlets | |
| | two ports for corrosive | (3 adsorptive/ 1 He/ 1 | |
| | gases. | calibration) | |
| | II. Provision should be | , | |
| | available to expand the | V. Minimum 1 MFC should | , |
| | number of gas inlet | be available in the system | |
| | lines. | one each for Carrier, | |
| | IIII-OH. | one cach for Carrier, | |

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| | III. At least one mixed gas line should be provided in the main instrument with provision to upgrade with more mixed gas lines. IV. The system should be equipped with mass flow controllers. V. Minimum 3 MFC's should be available in the system one each for Carrier, Pretreatment/Pulse and Mix | Pretreatment/Pulse and Mix gas lines. | |
|---|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|---------------------------|
| | gas lines. | | |
| 8 | Point no. B (14) | To Remove: Compulsory clause- III. Firm must submit | No Modification suggested |
| | Firm must submit a conceptual P&ID & flow diagram. | a conceptual P&ID & flow diagram. | suggested |

M/s Verder Scientific

| S/No. | Annexure Points | Request for amendment | Response |
|-------|---------------------------------|----------------------------|-----------------------------------------------|
| 1 | Point no A (5) | 1 | Modified to – |
| 1 | I. The system should be | Request to change the | I. The system |
| | having an electrical | volume of Cryo Cooler from | should be having |
| | furnace to run | 25 L to 10 L or more. | an electrical |
| | automatically the | | furnace to run |
| | temperature | | automatically the |
| | programmed | | temperature |
| | experiment from | | programmed |
| | room temp to 1100°C | | experiment from |
| | or better. | | room temp to |
| | II. High-temperature | | 1100°C or better. |
| | furnace should | | II. High-temperature |
| | provide quick and | | furnace should |
| | accurate ramp rates to | | provide quick and |
| | the desired | | accurate ramp |
| | temperature with | | rates to the desired |
| | excellent temperature | | temperature with |
| | control and | | excellent |
| | repeatability ± 1 0 C, | | temperature |
| | III. The system should be | | control and |
| | provided with rapid cooling | | repeatability ± 1 ${}^{0}C$. |
| | attachment with Cryo, cooler | | |
| | with 25 L liquid Nitrogen | | III. The system should be provided with rapid |
| | Storage capacity. | | be provided with rapid |

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| 3045 | | destruction of the second seco | cooling attachment with Cryo. cooler with 10 L |
|------|-----------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|
| | | | or more liquid Nitroge Storage capacity. |
| 2 | Point no A (11) Vapor generator option should be accessible for future studies and supplied with the system | Request to "Instrument having facility to add accessories w/o making any hardware change for Vapor generator for future studies and upgradation. | Modified to – Vapor generator option should be accessible for future studies |

Other Technical Specification and terms and condition of the tender document will remain same.

Dr. V. C. Palla