

CSIR - NATIONAL PHYSICAL LABORATORY

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From: Director, CSIR-NPL

Tender No. 18/SKS/OTE(833)26PB/T-33

Dated 24.08.2026

CORRIGENDUM

With reference to NPL's Global Tender ID: **2026_CSIR_286912_1**, Pre-Bid Conference (PBC) was concluded on 18.08.2026 for "**BET analyser for determination of fineness of the material**". Consequent upon the outcome of PBC, **some changes have been made in the technical specification of captioned tender. Revised specifications are as follows:**

Technical Specifications for BET analyser for determination of fineness of the material

1. Analyzer Measurement Capabilities:

- a) Measurement Principle: Volumetric gas adsorption technique.
- b) Measurement Parameters: The Analyser should be able to measure the adsorption / desorption isotherms, BET specific surface area, pore size distribution, pore volume, pore size modelling, surface energy / density function distribution, adsorption capacity, heat of adsorption of powders and porous materials
- c) Range of Surface area determination: 0.1m²/gm to 3000 m²/gm
- d) Pore Diameter Range: 0.7 – 500 nm
- e) Accuracy of the instrument should be $\pm 2\%$ or better
- f) Reproducibility should be $\pm 2\%$ or better.

2. Analyzer Measurement Feature:

- a) Measurement Ports: At least 3 samples ports for simultaneous analysis of 3 or more samples at a time.
- b) Pressure Transducers: System should have 5 or more pressure transducers of 1000 torr capacity and accuracy of the sensor shall be at least $\pm 0.15\%$ or better

3. Sample Holder:

- a) Sample holders with 1.5 to 2 ml capacity for high surface area samples and 5 ml capacity for low surface area samples must be provided, Sample tubes must have provision for replaceable filters to prevent particles from the sample entry into analysis system to avoid contamination / blockages.
- b) The bidder shall supply a suitable reference standard along with the instrument for instrument verification. The same shall be used during the technical demonstration.

4. Samples pretreatment / degassing / Regeneration System:

- a) Degassing system must have a temperature range of ambient to 450°C
- b) Heating Accuracy of $\pm 5^{\circ}\text{C}$ or better
- c) It should be possible to do pretreatment at least 6 samples simultaneously.

5. Vacuum System:

- a) System should be equipped with two independent vacuum pumps one for analyzer and second for degassing system.
- b) The vacuum pumps should be able to generate a vacuum of 1 Pa or better
- c) System should have Integrated Pirani vacuum gauge for monitoring the vacuum level in the system.

6. Software Features

- a) Software should be able to measure the adsorption / desorption isotherms, BET specific surface area, pore size distribution, pore volume, pore size modelling, Surface energy / density function distribution, adsorption capacity, heat of adsorption of powders and porous materials.
 - b) Facility to monitor the progress of measurement in real time should be available.
7. The bidder shall provide SI (International System of units) traceable Standard/Certified reference material to calibrate/validate the system specification during installation.

8. Special Terms and Condition: -

- a) Technical demonstration (if required) shall be taken up during technical evaluation stage.

9. Warranty: Two years from the date of installation.

10. Bidder should install and demonstrate the machine at following locations at no additional cost

- A. CSIR-National Physical Laboratory, Delhi.
- B. National Council for Cement and Building Material, Ballabgarh.
- C. Central Soil and Materials Research Station, Delhi.

All other terms & conditions of said tender will remain the same.


Sr. Controller of Stores & Purchase

FORM TO BE FILLED BY IO WHILE CONVENING PRE-BID MEETING OF TSC.

File No. 18/SKS/OTE(833)26PB

Date: 18/08/2026

Pre-bid Meeting (To be typed clearly by the I/O)

Name of Indentor. Dr. Sanjoy Kumar Sheet

Indent No. PR503262052026 dated 10/07/2026

Item Description BET analyser for determination of fineness of the material

No. of Budgetary Quotes Two

(1) A pre-bid meeting of TSC was held on 18/08/2026.

(2) Following queries were raised by participating Bidders:

Name of the Firm	Queries Raised	Remarks, if any
1. M/s New Technology Instruments (LABTRON) (Online) 2. M/s Verder Scientific Pvt. Ltd. (Microtrac BEL). (Offline)	Please see Annexure- I	Please see Annexure- I

Indentor's recommendation

1. The comments, as received from bidders during PBC, and our response is as follows:

Tender Specification and its number	Comment of bidder	Response of Indentor (Accepted/ Not accepted)	Revised specification (If any)	Justification for non-acceptance
Please see Annexure- I	Please see Annexure- I	Please see Annexure- I	Please see Annexure- II	Please see Annexure- I

Final recommended specifications are as attached at **Annexure IV** and signed by I/O:

Corrigendum to Tender may be issued/ may not be issued.

Recommended Revised Date of Tender submission (if any) is

The specifications are generic and broad based.

Submitted to TSC for necessary approvals.

(Indenting Officer)

FORM TO BE USED BY TSC FOR FINALISING PRE-BID MINUTES

File No. 18/SKS/OTE(833)26PB

Date: 18/08/2026

TSC Minutes (To be typed clearly by the I/O)

Based on the Pre-bid meeting and recommendation of I/O, following changes have been made in the specifications:

Original Specifications	Final Specifications
Annexure- III	Annexure- IV

The file is forwarded to Purchase Section for uploading the final specifications and TSC minutes on the website and CPPP Portal.

Declaration: We hereby declare that we have no conflict of interest with any of the bidder in this tender

(I/O)

(Member)

(Member)

(Member)

(Member)

(Domain Expert)

(Domain Expert)

(Chairman)

Queries Raised during pre-bid conference and via email from Vendors:

Sr. No.	Features	Technical Specification	M/s New Technology Instruments (LABTRON)	M/s Verder Scientific Pvt. Ltd. (Microtrac BEL)	Replies/Remarks
1	Analyzer Measurement Capabilities	a) Measurement Principle: Volumetric gas adsorption technique	_____	_____	_____
		b) Measurement Parameters: The analyser should be able to measure adsorption/desorption isotherms, BET specific surface area, pore size distribution, pore volume, pore size modelling, surface energy/density function distribution, adsorption capacity and heat of adsorption of powders and porous materials	_____	_____	_____
		c) Range of Surface area determination: 0.1 m ² /gm to 3000 m ² /gm	_____	_____	_____
		d) Pore Diameter Range: 0.7 – 500 nm	_____	_____	_____
		e) Accuracy of the instrument should be $\pm 2\%$ or better	_____	_____	_____
		f) Reproducibility should be $\pm 2\%$ or better.	_____	_____	_____
2	Analyzer Measurement Feature	a) Measurement Ports: At least 3 samples ports for simultaneous analysis of 3 or more samples at a time.	_____	_____	_____
		b) Pressure Transducers: System should have 5 or more pressure transducers of 1000 torr capacity and accuracy of the sensor shall be at least $\pm 0.15\%$ or better	_____	_____	_____
3	Sample Holder	a) Sample holders with 1.5 to 2 ml capacity for high surface area samples and 5 ml capacity for low surface area samples must be provided, Sample tubes must have provision for replaceable filters to prevent particles from the sample entry into analysis system to avoid contamination / blockages.	_____	_____	_____
		b) The bidder shall supply a suitable reference standard along with the instrument for	_____	_____	_____

		instrument verification. The same shall be used during the technical demonstration.			
4	Sample Pretreatment / Degassing / Regeneration System	a) Degassing system must have a temperature range of ambient to 450°C	_____	_____	_____
		b) Heating Accuracy of $\pm 5^{\circ}\text{C}$ or better	_____	_____	_____
		c) It should be possible to do pretreatment at least 6 samples simultaneously.	_____	_____	_____
5	Vacuum System	a) System should be equipped with two independent vacuum pumps one for analyzer and second for degassing system	_____	_____	_____
		b) The vacuum pumps should be able to generate a vacuum of 1 Pa or better	_____	_____	_____
		c) System should have Integrated Pirani vacuum gauge for monitoring the vacuum level in the system.	_____	_____	_____
6	Software Features	a) Software should be able to measure the adsorption / desorption isotherms, BET specific surface area, pore size distribution, pore volume, pore size modelling, surface energy / density function distribution, adsorption capacity, heat of adsorption of powders and porous materials.	_____	_____	_____
		b) Facility to monitor the progress of measurement in real time should be available	_____	_____	_____
7	Calibration	The bidder shall provide OEM calibration certificates for the analyser.	_____	7. Query: “The bidder shall provide CRM/Standard Reference Material to calibrate/validate the instruments at the installation site during installation.”	Reply for M/s Verder Scientific Pvt. Ltd. (Microtrac BEL) Accepted and modified to: “The bidder shall provide SI (International System of units) traceable Standard/Certified reference material to calibrate/validate the system specification during installation.”

					Justification: SI-traceable Standard/Certified Reference Material enables performance verification and validation of the instrument.
8	Special Terms & Conditions	Technical demonstration (if required) shall be taken up during technical evaluation stage.	_____	_____	_____
9	Warranty	Two years from the date of installation.	_____	_____	_____
10	Bidder should install and demonstrate the machine at following locations at no additional cost	A. CSIR-National Physical Laboratory, Delhi B. National Council for Cement and Building Material, Ballabgarh. C. Central Soil and Materials Research Station, Delhi	_____	_____	_____

Tender Specifications of BET analyser for determination of fineness of the material.

Sr. No.	Features	Description (Before Pre-Bid)	Revised Specifications (After Pre-Bid)
1	Analyzer Measurement Capabilities	a) Measurement Principle: Volumetric gas adsorption technique	a) Measurement Principle: Volumetric gas adsorption technique
		b) Measurement Parameters: The analyser should be able to measure adsorption/desorption isotherms, BET specific surface area, pore size distribution, pore volume, pore size modelling, surface energy/density function distribution, adsorption capacity and heat of adsorption of powders and porous materials	b) Measurement Parameters: The analyser should be able to measure adsorption/desorption isotherms, BET specific surface area, pore size distribution, pore volume, pore size modelling, surface energy/density function distribution, adsorption capacity and heat of adsorption of powders and porous materials
		c) Range of Surface area determination: 0.1 m ² /gm to 3000 m ² /gm	c) Range of Surface area determination: 0.1 m ² /gm to 3000 m ² /gm
		d) Pore Diameter Range: 0.7 – 500 nm	d) Pore Diameter Range: 0.7 – 500 nm
		e) Accuracy of the instrument should be ±2% or better	e) Accuracy of the instrument should be ±2% or better
		f) Reproducibility should be ±2% or better.	f) Reproducibility should be ±2% or better.
2	Analyzer Measurement Feature	a) Measurement Ports: At least 3 samples ports for simultaneous analysis of 3 or more samples at a time.	a) Measurement Ports: At least 3 samples ports for simultaneous analysis of 3 or more samples at a time.
		b) Pressure Transducers: System should have 5 or more pressure transducers of 1000 torr capacity and accuracy of the sensor shall be at least ±0.15% or better	b) Pressure Transducers: System should have 5 or more pressure transducers of 1000 torr capacity and accuracy of the sensor shall be at least ±0.15% or better
3	Sample Holder	a) Sample holders with 1.5 to 2 ml capacity for high surface area samples and 5 ml capacity for low surface area samples must be provided, Sample tubes must have provision for replaceable filters to prevent particles from the sample entry into analysis system to avoid contamination / blockages.	a) Sample holders with 1.5 to 2 ml capacity for high surface area samples and 5 ml capacity for low surface area samples must be provided, Sample tubes must have provision for replaceable filters to prevent particles from the sample entry into analysis system to avoid contamination / blockages.
		b) The bidder shall supply a suitable reference standard along with the instrument for instrument verification. The same shall be used during the technical demonstration.	b) The bidder shall supply a suitable reference standard along with the instrument for instrument verification. The same shall be used during the technical demonstration.
4	Sample Pretreatment / Degassing / Regeneration System	a) Degassing system must have a temperature range of ambient to 450°C	a) Degassing system must have a temperature range of ambient to 450°C
		b) Heating Accuracy of ± 5°C or better	b) Heating Accuracy of ± 5°C or better
		c) It should be possible to do pretreatment at least 6 samples simultaneously.	c) It should be possible to do pretreatment at least 6 samples simultaneously.

5	Vacuum System	a) System should be equipped with two independent vacuum pumps one for analyzer and second for degassing system	a) System should be equipped with two independent vacuum pumps one for analyzer and second for degassing system
		b) The vacuum pumps should be able to generate a vacuum of 1 Pa or better	b) The vacuum pumps should be able to generate a vacuum of 1 Pa or better
		c) System should have Integrated Pirani vacuum gauge for monitoring the vacuum level in the system.	c) System should have Integrated Pirani vacuum gauge for monitoring the vacuum level in the system.
6	Software Features	a) Software should be able to measure the adsorption / desorption isotherms, BET specific surface area, pore size distribution, pore volume, pore size modelling, surface energy / density function distribution, adsorption capacity, heat of adsorption of powders and porous materials.	a) Software should be able to measure the adsorption / desorption isotherms, BET specific surface area, pore size distribution, pore volume, pore size modelling, surface energy / density function distribution, adsorption capacity, heat of adsorption of powders and porous materials.
		b) Facility to monitor the progress of measurement in real time should be available	b) Facility to monitor the progress of measurement in real time should be available
7	Calibration	The bidder shall provide OEM calibration certificates for the analyser.	The bidder shall provide SI (International System of units) traceable Standard/Certified reference material to calibrate/validate the system specification during installation.
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