



CORRIGENDUM

REFERENCE NO. :- P/C/123/AM/SO(SH)/OTE/22-23

DATE: 12/05/2023

NAME OF EQUIPMENT: ADVANCE PETROGRAPHIC MICROSCOPE FOR COAL ANALYSIS AND MINERALS STUDIES.

NOTE: The Bids must be submitted in the Central Public Procurement Portal (URL:<https://etenders.gov.in/eprocure/app>) only. Manual/Offline bids shall not be accepted under any circumstances. Bidders should quote in INR only.

CONSEQUENT TO THE PRE-BID MEETING HELD ON 03/04/2023, THE REVISED SPECIFICATION IS GIVEN BELOW:-

SPECIFICATIONS:-

REVISED TECHNICAL SPECIFICATIONS FOR ADVANCE PETROGRAPHIC MICROSCOPE FOR COAL ANALYSIS & MINERALS STUDIES

Technical Specification of Research Grade semi-automatic Petrographic Microscope Stand for Polarization with both Reflected and Transmitted Light for Coal Petrography, Rock, Minerals and Ore Study. The Instrument has to be Capable to Determination of Mean Max Reflectance (MMR), Reflectivity and Random Ro % (as per ASTM, ISO or any other International Standard), Maceral Distribution, Maceral Volume Fraction in Coal, Lignite and Coke Samples. This has to be Equipped with Motorized Point Counting Stage, Digital Camera (Peltier Cooled), Imaging Software, Software for Vitritinite Reflectance Measurement & Point Counting Software for Maceral Classification along with Conoscopy Application for Minerals.

SI No	Head	Specification
1.	Type	Research Grade Polarized Petrographic Microscope
2.	Mode	Reflected and Transmitted light microscope (with constant colour temperature)
3.	Illumination	<ul style="list-style-type: none">• Through two independent light source for reflected and transmitted light.• Motorized Neutral Density filter management for colour balancing or similar kind of motorized setup using filter etc.• Should have Fully Automatic Illumination System for both Transmitted and Reflected axes with motorized Aperture diaphragm and Field diaphragm in both the light (RL + TL) axes, to work in synchronisation with coded objective magnification without operator intervention.
4.	Objective and Reflector	<ul style="list-style-type: none">• 4-fold or more objectives, centerable and encoded• Mechanical adjustment with coarse and fine adjustment and adjustable upper focus stopper to prevent contact with sample.• 180° rotatable polarizing microscope analyser with built-in degree stge.• Polarizer RL with three switchable position 0°, 45°, 90°.

		<ul style="list-style-type: none"> • Whole wave plate, quarter wave plate and quartz wedge (1st to 4th Order) compensators for nosepiece slot. • Semi-Apochromat grade, POL low strain objectives for 5X, 10X, 20X and 40X. Also Extremely low reflectance objective, dedicated objective lens for Incident Light Coal application designed for immersion oil for 20X oil and 50X oil. • Eye piece pair 10X with F.N. 25; One of them with cross line. • Kotter-graticule for Micro-lithotype coal analysis.
5.	Display	<ul style="list-style-type: none"> • Built-in display panel for Live status of all the functional parameters such as brightness, Position of Field and Aperture diaphragms for both light (RL + TL) axes, contrast, magnification etc.
6.	Stage	<ul style="list-style-type: none"> • Vertically movable, fitted with verniers, brakes and clumps (with adapter for slide 50x25mm or more) • Should have rotating stage Pol 360 Deg. with 45 deg. Click stop and clamp. • Should have object guide mechanical stage for XY Movement for this specimen.
7.	Conoscopy	<ul style="list-style-type: none"> • Should have centrable, focusable advance Bertrand lens module for conoscopy with coupled pinhole diaphragm for conoscopy isolation of small crystal. • POL grade 20X and 40X objective to be included dedicated for conoscopy application
		<ul style="list-style-type: none"> •

Attachments:

SI No	Head	Specification
8.	Fluorescence illuminator	<ul style="list-style-type: none"> • Fluorescence illuminator and attachments for 100W Mercury (HG) or better combined with necessary filters for Study of Coal materials

		<ul style="list-style-type: none"> • Coupled with motorized/manual switching mirror between white light and Epi Fluorescence, lamp housing, booster Lens, protective shield • Immersion oil -500ml as per ISO 8036
9.	Point Counting Stage & Software	<ul style="list-style-type: none"> • Automatic point counting (motorized) • Horizontal movement- Travel Distance: X-direction: 50mm or more, Y-direction: 25mm or more • Step of increment: 0.4 mm or less and compatible with the provided software.
10.	Photometer/ Spectrometer	<ul style="list-style-type: none"> • Latest PMT Photometer/ CCD Spectrometer meter with wavelength scanning system at 546 nm. • PMT Photometer/ CCD Spectrometer meter with built in backward illumination, high voltage generator, required software for coal maceral characterization study under determination reflectance measurement, data and statistics. The software should be capable to organise data, analysis technique and measurement. The reflectance study by this attachment as well as software to be supplied will follow the International Committee of Coal Petrography (ICCP) or ISO/ DIN Norm 7404-05 standards. • System should be supplied in complete with standard accessories like immersion oil, 50x oil objectives, observation tube with dual port and C-mount.
11.	Camera & Imaging Software	<ul style="list-style-type: none"> • Digital colour camera with CCD sensor / CMOS sensor with chip size 2/3" or larger with Dynamic range 70dB or greater • max. image size 2560x1920 pixel, 5 Mpixels or higher • Fast live image 1280 X 960 pixel with 18fps -Pixel size 3.4 μm X 3.4 μm, • Fast and ultrasharp grayscale modes for more details in delicate imaging situations

		<ul style="list-style-type: none"> • Standard Imaging software provides functions integrated with the means of acquiring, storing, calibrating, annotating and interactively and automatically measuring microscope images with a Windows style user interface. • A scale bar or Micron marker can be super imposed on the image with spatial calibration for microscope and camera combinations. • Interactive measurements are made by using the mouse to indicate the areas, lines, distances, angles, rectangles, counter points. • The systems software should be latest, original and licenced version not requiring renewal. It should be also upgradable. • The image analysis software should be able to perform multi-phase analysis.
12.	Software for System Control	<ul style="list-style-type: none"> • Control of the photometer/spectrometer and the Microscope. • Individual configuration of the measuring parameter. • Should have feature for displaying the results in various histograms or tables

Accessories:

Sl No	Head	Specification
13.	Computer System	<ul style="list-style-type: none"> • Intel core i5 processor, HDD 1 TB, RAM 32 GB, Graphic Card 2 GB; Full HD, 27" Monitor, OS Windows 10 Professional or higher and Colour printer.
14.	UPS	<ul style="list-style-type: none"> • On-line UPS with maintenance free batteries to provide minimum 30-minute backup.
15.	Others	<ul style="list-style-type: none"> • Calibration Standard: For Coal against 546 nm starting from 0%, 0.4%, 0.6%, 0.9% and 1.7%, against oil.

		<ul style="list-style-type: none"> • Levelling press for accurate sample levelling and minimum 5 nos of metal slide. • Dust cover for the instrument • Operating manual, Maintenance manual, Servicing manual • Spare parts list with source of supply and prices • User satisfactory certificate from at least one user • Pre-installation requirements of foundation plan ,details, electromagnetic interference and vibration (if needed).
16.	Warranty	<ul style="list-style-type: none"> • Two years after commissioning • Two years from the date of Installation and commissioning • After warranty, AMC for three years has to be provided but will not be considered in price bidding.

1. Before, the opening the Financial Bid all qualified bidders are required to give demonstration of the equipment through online/offline. The date of demonstration will be decided mutually.
2. The instruments with all its accessories are to be supplied and installed at CSIR-National Metallurgical Laboratory, Jamshedpur.
3. Vendor has to provide training to our operating personals for safe handling of the equipment for 5 working days. Proper performance and calibration of the instrument is to be shown and all other features of the instrument are to be demonstrated by party or his authorized agent at our site.

Delivery of all ordered materials is to be made within 4 months from the date of issue of Purchase Order.

THE REVISED DEADLINE FOR BID SUBMISSION END DATE AND DATE OF OPENING OF BIDS ARE AS FOLLOWS:


Last Date for Submission of Bids	22/05/2023 by 15:30 P.M. (IST)	Opening of Bids	23/05/2023 by 15.30 P.M. (IST)
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BID Securing Declaration Form should reach this office by 22/05/2023.

The above amendments shall amount to amendments of the relevant terms of our Bid Document for CSIR-NML Tender No. P/C/123/AM/SO(SH)/OTE/22-23.

All other Tender terms and conditions remain unchanged.

Bidders should quote only in INR.


 Stores & Purchase Officer
 CSIR-NML, Jamshedpur

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