INDIAN INSTITUTE OF SCIENCE EDUCATION AND RESEARCH THIRUVANANTHAPURAM [IISERTVM]

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IISER/PUR/2145/SG/SEESS/24-25

तारीख/ Date: 15 May 2025

CORRIGENDUM TO TENDER NO
No: IISER/PUR/2145/SG/SEESS/24-25

Sub: Supply, Installation, and commissioning of Cutting, Grinding, and Polishing Instruments and consumables for geological materials: reg

Ref: Tender Enquiry No. 2025_IISRT_854031_1

1. Since no qualified offers were received, the above mentioned tender is re-tendered with revised technical specification at Annexure 1.

2. The due date and date of opening will be as follows:-

1.	Date of Issue/Publishing	15 May 2025
2.	Document Download/Sale Start Date	15 May 2025
3.	Document Download/Sale End Date	04 Jun 2025
4.	Clarification End Date	24 May 2025
5.	Last Date and Time for Uploading of Bids	04 Jun 2025 (1500 Hrs)
6.	Date and Time of Opening of Technical Bids	05 Jun 2025 (1530 Hrs)
7.	Date of Opening of Price Bid	Will be intimated later
8.	Tender Fee (INR)	Nil
9.	EMD Amount (INR)	Rs.60000/- (Rupees Sixty Thousand only)
10	Detailed Specifications	As per annexure 1

3. All other Terms and Conditions remain the same as per the tender document dated 19.03.2025. Bidders may quote accordingly.

Thanking You,

Yours Faithfully

Assistant Registrar (P&S)

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Annexure 1 to tender
No: IISER/PUR/2145/SG/SEESS/24-25

Name of the equipment: Cutting, Grinding, and Polishing Instruments and consumables for geological materials.

Intended use/Purpose: Preparation of samples for microstructural, petrological, and mineralogical characterization.

A. Technical Specifications and Requirements for a Tabletop High speed Rock Cutting Apparatus for Large Samples

1. The apparatus should have a stainless-steel body that is rust-proof and corrosion-resistant for durability.
2. It should provide precise cut length and positioning measurements, such as an engraved scale bar, to ensure high accuracy.
3. The machine must be equipped with a high-speed, powerful motor (for example, 5 HP or higher), capable of cutting large rock samples efficiently ensuring minimum deformation of the sample surface.
4. The blade rotation speed (RPM) should be adjustable using a simple and reliable controller. The range of RPM values achievable should be clearly mentioned.
5. The cutting system should include:
    - High-quality, industrial-grade diamond blades (8 inches or larger), resistant to rust.
    - Specifications on blade longevity should be provided.
    - The system should support different blade sizes (for example, 6 to 12 inches) for future modifications.
6. X-Y-Z axis control of blade movement should be provided, using joysticks and handles for precise operation.
7. The system should support both dry and wet cutting, with an efficient auto drainage system for wet cutting.
8. A functional water compartment with an integrated drainage system (including drainage pipes) must be included.
9. The apparatus should be electrically shockproof, complying with standard safety practices.
10. It should include international standard sample holders and clamps for secure sample positioning.
11. Bright LED illumination should be provided for clear visibility during cutting.
12. The machine must have a rigid base and should not vibrate during cutting to ensure stability.
13. Industrial-standard safety features must be included, such as:
    - Emergency stop button
    - Door safety lock mechanism
14. The package should include:
    - A set of additional diamond blades and consumables
    - Necessary accessories for blade maintenance and general upkeep of the rock cutting apparatus
15. A splash-proof, corrosion-resistant, see-through protective hood should be attached for operator safety.
16. The rotating wheel must receive an uninterrupted water flow for cooling and dust control.
17. The system should have an effective dust control mechanism to prevent dust dispersion in the workspace.
18. The machine should feature easy-to-operate for user-friendly operation. It should be clearly mentioned if push buttons or LCD touch screen control is being provided.
19. Specify voltage and power input (e.g., 110V/220V), single-phase or three-phase power.
20. Specify if the system includes water flow adjustment. In such a case, its functionality should clearly be explained.
21. Specify if there are any measures to reduce operational noise levels.
22. All the components of the apparatus should be from the same manufacturer.

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B. Technical Specifications and Requirements for a Tabletop Hot Plate with Spring-Loaded Glass Slide Mount System for Thin Section Preparation

1. The system should have a metal body that is rust-proof and corrosion-resistant for durability.
2. It should allow mounting of 8 to 12 specimens under uniaxial, uniform spring loads to ensure consistent pressure.
3. A compatible heater and temperature controller should be integrated. The temperature controller must include a digital display for precise monitoring.
4. The metal uniaxial loads should be easily detachable to allow the system to function as a hot plate when needed.
5. The heating system should be capable of reaching at least 200°C or higher. A system reaching a maximum of 300°C will be preferred.
6. The vendor should supply the following consumable items which, if needed, can be obtained from other sources:
    - Multiple sets of thin section slides (EPMA grade) in different sizes
    - Multiple thin section storage boxes of various sizes (for holding a few slides to many)
    - A set of high-quality glue for permanently attaching rock chips to glass slides for at least 3 years of usage
    - Multiple paper tapes for securing samples
    - Several boxes of solid adhesives (to temporarily stick rock chips to glass slides) that melt at a specific temperature (should be mentioned) for at least 3 years of usage
7. Cleaning agents capable of dissolving glues should be provided (e.g., acetone-like substances).
8. Specify voltage and power input (e.g., 110V/220V, single-phase).
9. Specify if the hot plate ensures even heat distribution.
10. Specify if the spring-loaded system allows fine adjustments for different sample thicknesses.
11. The apparatus should be electrically shockproof, complying with standard safety practices.
12. All the components of the apparatus should be from the same manufacturer.

C. Technical Specifications and Requirements for a Tabletop Vacuum Impregnation System

1. The system should include two vacuum chambers of different sizes. One smaller chamber with a diameter lower than 20 cm and one larger chamber with a diameter of at least 20 cm or higher.
2. The package should include spares such as sufficient number of high-quality windpipes and metal clips for secure connections.
3. A high-performance vacuum pump (220V or higher, 50W or higher) that sucks the air out of the vacuum chamber is needed. The expected value of the lowest pressure achievable should be clearly mentioned (for example, 0.1 MPa or lower).
4. Consumables including several bottles of good quality resin (+ hardener), disposable plastic cups and stirrers.
5. Consumables including a variety of molds (rubber, polymer, or plastic), with a minimum of 20 pieces or more.
6. Consumables including multiple cleaning agents that dissolve resins are required. If needed, it can be obtained from other sources.
7. All the components of the apparatus should be from the same manufacturer.

D. Technical Specifications and Requirements for a Tabletop Double-Disc Polishing Machine

1. The machine should have two polishing wheels, each with a diameter of 12 inches or larger, made of cast iron and aluminum. The wheels must be rust-proof.
2. The body of the apparatus must be corrosion-resistant for durability.

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3. The system should have one disc for coarse grinding and another for fine polishing, ensuring smooth and efficient sample preparation.
4. The machine should have a rigid base and should not vibrate at high speeds to maintain stability during operation.
5. The speed controller must adhere to international standards and should allow speed adjustments from ≤50 RPM to ≥ 500 RPM. It should be clearly mentioned if a stepless speed regulation will be provided or not. If not, then the mechanism should be clearly explained. Rotation direction of the blade should be mentioned.
6. The water flow rate for the wheels, delivered through flexible water jets, should be adjustable via a dedicated speed controller. If not, then the mechanism should be clearly explained. The system must include an integrated inlet and outlet water drainage system.
7. An emergency stop button should be included to immediately halt the rotating wheels for safety.
8. The package should include several handhold sample holders for uniform manual polishing. Vendors should provide images of the holders. Additionally, solid adhesives that melt at specific temperatures to temporarily stick rock chips to handhold sample holders should be provided in sufficient quantities.
9. Magnetic discs for temporary attachment to the rotating wheels should be included in a quantity sufficient for at least three years.
10. Coarse sandpapers for grinding, ranging from 100 to 1500 grit sizes, should be provided. The quantity should be enough for at least three years, with a minimum of 20 pieces per grit size.
11. Polishing mats in 30, 15, 10, 5, 1, and 0.25 µm sizes, compatible with magnetic discs, should be supplied. The quantity should be enough for at least three years, with a minimum of 20 pieces per size.
12. Fine-polishing cloths suitable for diamond polishing and colloidal silica gel polishing should be provided in adequate quantity.
13. Several bottles of colloidal silica gel (needed for manual EBSD polishing) should be supplied. The required quantity is 3 to 5 bottles, depending on bottle size.
14. The apparatus must have a well-designed drainage system for effective cleaning after silica gel polishing. The cleaning methodology after rock polishing should be clearly mentioned.
15. Specify voltage and power input (e.g., 220V/110V, single-phase or three-phase).
16. Specify safety features.
17. All the components of the apparatus should be from the same manufacturer.

E. Technical Specifications and Requirements for a Tabletop Precision Grinding and Sectioning Machine

1. The machine should have a stainless-steel body that is rust-proof, waterproof, and corrosion-resistant. It must be rigid and should not vibrate at high speeds. The base should be stable and robust.
2. X-Y-Z axis control of blade movement should be clearly explained. Functionalities of joysticks and handles for precise operation should be clearly mentioned. It should be mentioned if the Z-axis movement is controlled by gravity (with counterweights) or by joysticks.
3. The machine should support precision cutting, grinding, and positioning measurements, such as an engraved scale bar and micrometer, to achieve highly accurate cuts.
4. The apparatus should have two separate areas for cutting and grinding within the same unit.
5. Grinding capability should reach up to 30 µm. The grinding wheel must be properly aligned to ensure the sample surface remains perfectly horizontal. Additionally, the expected longevity of the grinding wheel should be specified.
6. The system should include diamond saws with diameters ranging from 5 to 8 inches.
7. The package should also include blades for cutting metals and alloys, such as Cubic Boron Nitride (CBN) blades.

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8. It should be specified whether an emergency stop button will be provided to immediately shut off the rotating wheels.
9. The speed controller must meet international standards and should allow speed adjustments between 100 and 3000 RPM.
10. The functionality of vacuum sample holding system that can hold various sizes of glass slides and rock chips during grinding and sectioning should be clearly mentioned.
11. It should be specified whether manual sample holders can be fitted. If they can, then they should be provided.
12. The machine should be equipped with industrial-grade motors for durability and consistent performance.
13. The cooling mechanism (e.g., water-based) should be clearly explained.
14. Specify voltage and power specifications (e.g., 220V/110V, single-phase or three-phase) should be specified.
15. Safety features should be of industrial standard and clearly specified. For example, emergency stop button, door safety lock, etc.
16. All the components of the apparatus should be from the same manufacturer.

Warranty and Annual maintenance:

1. The entire unit, including hardware, software, and other accessories, should have a minimum of 3 or more years of warranty from the installation date.

General conditions:

1. Performance certificates of the quoted models from the eminent government research institutions or Institution of National Importance should be added. Additionally, a user list of the quoted model with contact details should also be provided. Preference will be given to the users with experience in Structural Geology, Mineral Physics, Mineralogy, Ore Geology, and Petrology.
2. The compliance certificate should include a point-by-point response and explanation for each requirement mentioned in the technical specifications.
3. A technical offline demonstration should be done to understand the functionality, quality assessment, and comparative evaluation.
4. The packing, forwarding, installation, and training should be completely free of cost.
5. A proper training session should be conducted after installation in which all the technicalities (both the hardware and software) should be explained.
6. The equipment should be supplied to the School of Earth, Environmental and Sustainability Sciences, Indian Institute of Science Education and Research Thiruvananthapuram, Maruthamala P.O., Vithura, Thiruvananthapuram 695551, Kerala.
7. Both the hard and soft copies of operating manuals for the operation of hardware and software should be provided.
8. The equipment supplied should be of the latest model from the manufacturer and the spare parts for the entire unit should be made available for at least the next 10 years.
9. Only the original OEM should participate in the tender or else their authorized dealers or representatives with an authorization letter or proof of supply from OEM should be included at the time of tender.
10. The bidder should have supplied instruments to other educational institutes in India. The purchase copies from those institutes should be attached as documentary evidence.
11. An undertaking from OEM is required stating that they would facilitate the bidder regularly with technology/product updates and extend support for the warranty as well.

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