

**DEPARTMENT OF MATERIALS ENGINEERING**  
**INDIAN INSTITUTE OF SCIENCE (IISc), BENGALURU, INDIA**

**Global tender notification for the procurement of- VERTICAL DIAMOND WIRE SAW  
SETUP**

**(Last Date for Submission: 25<sup>th</sup> March 2024)**

**GTE Approval No.: IISc-GTE-2023-333**

**Tender Notification Ref No.: MT/GL-TNDR/SSU-DRDO-DIA/23-24/02**

**Date: 4<sup>th</sup> March 2024**

This is a **Request for Quote (RFQ)** for the supply of “**VERTICAL DIAMOND WIRE SAW SETUP**” for the Department of Materials Engineering Indian Institute of Science, Bangalore. The tender should be submitted in two separate sealed envelopes: one containing the **technical bid** and the other containing the **commercial bid**, both of which should reach us, duly signed on or before **25<sup>th</sup> March 2024 on or before 1700 hrs.** The bids should be addressed to:

The Chair  
Department of Materials Engineering  
Indian Institute of Science  
Bangalore – 560 012  
Kind Attn.: Prof. Satyam Suwas  
Email: [satyamsuwas@iisc.ac.in](mailto:satyamsuwas@iisc.ac.in) / [chair.mte@iisc.ac.in](mailto:chair.mte@iisc.ac.in)

The purchase of a vertical diamond wire saw is planned. This setup will be utilized for precise cutting of the samples for microstructure characterization of various materials of interest. Below, the detailed technical specifications for an ideal machine are mentioned.

**Tender Summary**

1	Tender number	<b><i>MT/GL-TNDR/SSU-DRDO-DIA/23-24/02</i></b>
2	Tender Date	<b><i>04.03.2024</i></b>
3	Item Description	<b>VERTICAL DIAMOND WIRE SAW SETUP</b>
4	Tender Type	Two Bid System: (a) Technical Bid (Part A) (b) Commercial Bid (Part B)
5	Place of Tender submission	Prof. Satyam Suwas Chair, Department of Materials Engineering, Indian Institute of Science, Bangalore - 560012
6	Last date & Time for submission of tender	<b>25<sup>th</sup> March 2024 at 5.00 P.M</b>

### **General Terms and Conditions:**

1. The bid should be submitted in a two-cover system, i.e., technical bid and commercial bid separately in sealed covers. The technical bid should contain all commercial terms and conditions, except the price.
2. In the commercial bid, the price should be inclusive of all discounts.
3. The lead time for the delivery of the items should not be more than 16 weeks from the date of receipt of our purchase order. It should be clearly mentioned in the technical and commercial bids.
4. All the quotations must be valid for at least 90 days at the time of submission.
5. List of customers and references: It is preferable for the Bidder should have supplied similar equipment in centrally Funded Technical Institutes (IITs, IISC, IISER, NIT). Please provide the details and contact information.
6. The Bidder must not be blacklisted/banned/suspended or have a record of any service-related dispute with any organization in India or elsewhere. A declaration to this effect should be provided.
7. Items in addition to those listed in the technical table that you would like to bring to the attention of the committee, such as data sheets, technical plots, etc. can be listed at the end of the compliance table.
8. Vendors are encouraged to highlight the advantage of their product over comparable products from the competitors.
9. If needed, a meeting for any technical clarifications can be scheduled with the undersigned by sending an email.
10. The Institute reserves the right to accept or reject any bid, or to annul the bidding process and reject all bids, at any time prior to the award of the contract without thereby incurring any liability of the affected bidder or bidders.
11. After the award of the purchase order, the vendor must provide an Order Acknowledgment within 30 days from the receipt of the Purchase Order.

The tender documents can be sent to the following address:

The Chairman  
Department of Materials Engineering  
Indian Institute of Science, Bangalore  
560012  
Karnataka (INDIA)

## TECHNICAL SPECIFICATIONS

**Scope of work:** Supply, installation, and commissioning of vertical diamond wire saw setup with the following features.

S. No.	VERTICAL DIAMOND WIRE SAW SETUP	
1	<p><b>Precision VERTICAL Diamond Wire Saw “BASE”</b></p>	<ul style="list-style-type: none"> <li>• The cut should be made by the movement of the wire on a workpiece that is bonded or clamped to a fixed support.</li> <li>• This feed should be automatically achieved by gravity.</li> <li>• The pressure exerted by the cutting tool (the diamond wire) on the sample should be adjustable.</li> <li>• The feed speed should be determined by the resistance of the material, which is thus not subjected to mechanical stress.</li> </ul> <ul style="list-style-type: none"> <li>• Vertical wire</li> <li>• Adjustable wire speed</li> <li>• Automatic saw shut off at the end of cutting or in case of wire breakage.</li> <li>• Designed for use with cutting fluid.</li> <li>• Easy to use.</li> </ul> <p>Specifications:</p> <ul style="list-style-type: none"> <li>• Cutting orientation → Vertical</li> <li>• Cutting feed → Gravity (+/- 300g)</li> <li>• Primary voltage → 230V-110V / 50-60Hz</li> <li>• Secondary voltage → 36Vdc</li> <li>• Electric motor → 200W</li> <li>• Primary fuse → Ø 5 x 20mm, 250V, 2A</li> <li>• Secondary fuse → Ø 5 x 20mm, 250V, 10A</li> <li>• Machine weight → 13.80 kg</li> <li>• Overall dimension → L x W x H; 401 x 345 x 455 mm</li> <li>• Drum diameter → 83 mm</li> <li>• Pulleys diameter → 80 mm</li> <li>• Table surface → 330 x 370mm</li> <li>• CE Certification → CE</li> <li>• USB Output → Yes</li> <li>• Wire diameter → 0.10-0.30mm</li> <li>• Wire length → 10m</li> <li>• Wire speed → 0-3.6 m/s</li> <li>• Wire tension. → 0.10-0.17 mm. 1 kg</li> <li>• Cleaning of wire → Cutting liquid</li> <li>• Sample weight → 2500 g</li> <li>• Sample dimension → &lt;H = 50 x W = 50; Ø 50mm</li> <li>• Warranty → 12 months</li> </ul>

2	<b>Accessories</b>	<ul style="list-style-type: none"> <li>• 1x Standard Table</li> <li>• 1xSupport sample holder</li> <li>• 1x Standard Sample holder with 5 ceramic plates Ø 30mm</li> <li>• 1x Intermediate support</li> <li>• 1x Drum pre-wound with 10 meters of diamond wire.</li> <li>• 1x Diamond wire spool 120 meter (0.30 mm- 20 micron)</li> <li>• 1x Cutting liquid concentrate 5% 500 ml</li> <li>• 1x Toolbox 1x LED Lamp with Clip-on</li> <li>• 1x Soft Touch Pen 1x Power Cable</li> <li>• Heating Plate 230V – 200W Model “Base”</li> <li>• Ceramic plates, Set of 5 Ceramic plates.</li> <li>• Adhesive Wax Bar 100 Degree Celsius</li> <li>• Winding Device</li> <li>• Wire empty drums (Precision)</li> <li>• Pulley (Precision)</li> <li>• Vise for round sample, D 12mm to 32mm</li> <li>• Diamond Wire 0.3mm – 20 mu, Spool 120m</li> <li>• Diamond Wire 0.30mm – 60 mu, Spool 120m</li> <li>• Cutting liquid – 500cc (Set of 4)</li> <li>• Dilution 5%</li> <li>• 1x User Manual</li> </ul>
3	<b>Pre-dispatch inspection</b>	<ul style="list-style-type: none"> <li>• Based on a mutually agreed testing plan, on-site testing on samples provided by IISc and qualification will be done before the equipment is made ready for shipping. Data should be shared with IISc, and approval should be obtained before shipping.</li> <li>• Supplier should furnish the compositional analysis of pull rods, fixtures, adapters, grips, and couplers before shipping</li> </ul>
4	<b>Acceptance</b>	<ul style="list-style-type: none"> <li>• The supplier must demonstrate all the functions of the system according to the specifications after successful commissioning at IISc</li> </ul>

- ✚ Should have proven record of successful installations within Indian education/research institutes. Proof of such installation must be enclosed.
- ✚ The OEM/Supplier should have trained service engineers stationed in India for any on-site service requirement, details to be provided in the offer.
- ✚ OEM/supplier should have requisite stock of necessary spare parts in India.
- ✚ Company should have a minimum annual turnover of INR 5 crores.

## **TERMS AND CONDITIONS**

1. Warranty period: 12 Months.
2. Supplier Credibility:
  - a. Supplier should compulsorily indicate details of facilities/expertise/ qualification of support staff in India. Factory-trained engineer/s should be available in India for complete product support.
  - b. Please enclose the User list in INDIA.
  - c. Minimum 3 Reference letters of the similar system supplied in INDIA need to be submitted for further consideration.
4. The institute reserves the right for final selection of items.
5. Vendors may quote for any other items/accessories separately as “Optional Items”.

For queries or clarifications, please contact:

***Dr. Ankur Chauhan (Assistant Professor) at [ankurchauhan@iisc.ac.in](mailto:ankurchauhan@iisc.ac.in)***

## Annexure-I

Note: Compliance Certificate must be enclosed with the technical bid. Non submission of Compliance Certificate will lead to disqualification of the bidder.

S. No.	VERTICAL DIAMOND WIRE SAW SETUP	C	NC	D	Remarks
1	<p><b>Precision VERTICAL Diamond Wire Saw “BASE”</b></p> <ul style="list-style-type: none"> <li>• The cut should be made by the movement of the wire on a workpiece that is bonded or clamped to a fixed support.</li> <li>• This feed should be automatically achieved by gravity.</li> <li>• The pressure exerted by the cutting tool (the diamond wire) on the sample should be adjustable.</li> <li>• The feed speed should be determined by the resistance of the material, which is thus not subjected to mechanical stress.</li> </ul> <ul style="list-style-type: none"> <li>• Vertical wire</li> <li>• Adjustable wire speed</li> <li>• Automatic saw shut off at the end of cutting or in case of wire breakage.</li> <li>• Designed for use with cutting fluid.</li> <li>• Easy to use.</li> </ul> <p>Specifications:</p> <ul style="list-style-type: none"> <li>• Cutting orientation → Vertical</li> <li>• Cutting feed → Gravity (+/- 300g)</li> <li>• Primary voltage → 230V-110V / 50-60Hz</li> <li>• Secondary voltage → 36Vdc</li> <li>• Electric motor → 200W</li> <li>• Primary fuse → Ø 5 x 20mm, 250V, 2A</li> </ul>				

		<ul style="list-style-type: none"> <li>• Secondary fuse → Ø 5 x 20mm, 250V, 10A</li> <li>• Machine weight → 13.80 kg</li> <li>• Overall dimension → L x W x H; 401 x 345 x 455 mm</li> <li>• Drum diameter → 83 mm</li> <li>• Pulleys diameter → 80 mm</li> <li>• Table surface → 330 x 370mm</li> <li>• CE Certification → CE</li> <li>• USB Output → Yes</li> <li>• Wire diameter → 0.10-0.30mm</li> <li>• Wire length → 10m</li> <li>• Wire speed → 0-3.6 m/s</li> <li>• Wire tension. → 0.10-0.17 mm. 1 kg</li> <li>• Cleaning of wire → Cutting liquid</li> <li>• Sample weight → 2500 g</li> <li>• Sample dimension → &lt;H = 50 x W = 50; Ø 50mm</li> <li>• Warranty → 12 months</li> </ul>				
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		<ul style="list-style-type: none"> <li>100 Degree Celsius</li> <li>• Winding Device</li> <li>• Wire empty drums (Precision)</li> <li>• Pulley (Precision)</li> <li>• Vise for round sample, D 12mm to 32mm</li> <li>• Diamond Wire 0.3mm – 20 mu, Spool 120m</li> <li>• Diamond Wire 0.30mm – 60 mu, Spool 120m</li> <li>• Cutting liquid – 500cc (Set of 4)</li> <li>• Dilution 5%</li> <li>• 1x User Manual</li> </ul>				
<b>3</b>	<b>Pre-dispatch inspection</b>	<ul style="list-style-type: none"> <li>• Based on a mutually agreed testing plan, on-site testing on samples provided by IISc and qualification will be done before the equipment is made ready for shipping. Data should be shared with IISc, and approval should be obtained before shipping.</li> <li>• Supplier should furnish the compositional analysis of pull rods, fixtures, adapters, grips, and couplers before shipping</li> </ul>				
<b>4</b>	<b>Acceptance</b>	<ul style="list-style-type: none"> <li>• The supplier must demonstrate all the functions of the system according to the specifications after successful commissioning at IISc</li> </ul>				

C-Compliant, NC- Non-Compliant, D-Deviation



## **Annexure-II**

### **MANUFACTURERS' AUTHORIZATION FORM**

[The bidder shall require the manufacturer to fill in this form in accordance with the instructions indicated. This letter of authorization should be on the letterhead of the Manufacturer and should be signed by the person with the proper authority to sign documents that are binding on the Manufacturer.]

Date: [insert date (as day, month, and year) of Bid Submission]

Tender No.: [insert number from Invitation for Bids]

To: **The Chair, Department of Materials Engineering, IISc, Bengaluru-560012**

#### WHEREAS

We [insert complete name of Manufacturer], who are official manufacturers of [insert full address of Manufacture's factories], do hereby authorize [insert complete name of Bidder] to submit a bid the purpose of which is to provide the following Goods, manufactured by us [insert name and or brief description of the Goods], and to subsequently negotiate and sign the Contract.

We hereby extend our full guarantee and warranty with respect to the Goods offered by the above firm.

Signed: [insert signature(s) of authorized representative(s) of the Manufacturer]

Name: [insert complete name(s) of authorized representative(s) of the Manufacturer]

Title: [insert title]

Duly authorized to sign this authorization on behalf of: [insert complete name of Bidder]

Prof. Satyam Suwas  
Chair, Department of Materials Engineering  
Indian Institute of Science  
Bangalore, Karnataka 560012  
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