

**Department of Materials Engineering  
Indian Institute of Science (IISc), Bangalore, INDIA**

**Local Tender Notice**

**Tender Notification Ref No.: MT/ENQ-TNDR/SSU/23-24/02**

**Date: 28<sup>th</sup> August 2023**

The Department of Materials Engineering Indian Institute of Science, Bangalore, invites tenders for supply of “**Surface Mechanical Attrition Technique (SMAT) set up**” to create nano crystallite at the metallic surface. This Invitation for Bids is open to all domestic (India based) manufacturers, Indian OEM or its authorized Indian distributors only.

The scope of bid includes Supply of “**Surface Mechanical Attrition Technique (SMAT) set up**” on FOR -IISc Bangalore basis.

The following is the technical specification of SMAT set up:

**Ultrasonic Generator Specification**

- |                           |   |                      |
|---------------------------|---|----------------------|
| 1. Vibration Type         | - | Ultrasonic Vibration |
| 2. Vibration Frequency    | - | 15K to 25K           |
| 3. Amplitude of Vibration | - | 10 to 30 micron      |
| 4. Amplitude Steps        | - | 4 Steps amplitude    |
| 5. Capacity               | - | 2000watt             |
| 6. Generator Type         | - | Continuous           |
| 7. Ultrasonic Generator   | - | 1 Nos                |
| 8. Converter              | - | 1 Nos                |
| 9. Booster                | - | 1 nos                |
| 10. Connecting Cable      | - | 1 Nos                |

**Horn Specification:**

- |                  |   |                         |
|------------------|---|-------------------------|
| 1. Horn Size     | - | Dia-100mm x Ht-150mm    |
| 2. MOC           | - | Aluminum                |
| 3. Mounting Type | - | Vertical Flange Mounted |

**Sample Mounting Adaptor**

- |                          |   |                            |
|--------------------------|---|----------------------------|
| 1. Adaptor Type          | - | Adjustable Jaw Type        |
| 2. Sample Size           | - | Upto 25mm Holding Capacity |
| 3. Sample Shape          | - | Square and circular shape  |
| 4. Adaptor Tilting angle | - | 0-20 Degree inclination    |

**Adaptor Holding Mechanism**

- |                                   |   |   |
|-----------------------------------|---|---|
| 1. Mounting Type                  | - | Centre Mounting with Horn                 |
| 2. Maximum Displacement of Holder | - | 400mm                                     |
| 3. Displacement Direction         | - | Upward and downward in Vertical direction |
| 4. Displacement Accuracy          | - | 1mm                                       |
| 5. Upward and Downward Mechanism  | - | Ball screw mechanism                      |
| 6. Height Measurement             | - | Calibrated Scale for height measurement   |

#### Safety Drum:

1. Diameter - 300mm
2. Height - 300mm
3. Shape - Conical and cylindrical
4. MOC - SS304
5. Cover - Adjustable Cover

#### Main Structure: Consist of Following Parts

1. Foundation Plate for Ball screw mechanism of Adaptor Holder
2. Mounting Frame for Horn
3. Mounting Frame for Guide Drum
4. Mounting for Control Panel
5. Mounting for Scale and Limit Switch and Wheels

### Tender Summary

1	Tender Number	<b>MT/ENQ-TNDR/SSU/23-24/02</b>
2	Tender Date	<b>28th August 2023</b>
3	Item Description	<b>Surface Mechanical Attrition Technique (SMAT) set up – 1 No.</b>
4	Tender Type	Two bid system: (a) Technical Bid (Part A) (b) Commercial Bid (Part B)
5	Place of tender submission	The Chairman Department of Materials Engineering, Indian Institute of Science, Bengaluru 560012 Kind Attn: Prof. Satyam Suwas
6	Last Date & Time for submission of tender	18th September 2023, on or before 1700 hrs

### Terms and conditions

1. Two-bid system (separate technical and financial bids) in sealed tenders.
2. The technical bid must clearly specify the prescribed technical specifications without including the prices. Please provide in detail the specifications under each subhead and bullet point. Unique characteristics may be highlighted.
3. Vendors who include price information in the technical bids will be automatically disqualified.
4. Technical bids will be opened first. IISc may seek clarifications after opening of technical bids and may ask vendors to perform some example experiments on the samples given by IISc to demonstrate the promised technical specifications. Vendors may be required to give presentations.
5. There are several items that require detailed information to be provided by the supplier. If information is not provided against any of these items, this will disqualify the supplier.
6. After technical evaluation by a committee, vendors may be asked to re-quote in a specific format

to facilitate comparison of prices.

7. Price bids of only technically qualified vendors will be considered.

8. The price must be quoted in INR (Indian Rupee). Quote should come only from Indian Original Equipment Manufacturer (OEM) or their Indian authorized distributor. The quotations should be on FOR-IISc Bangalore basis in INR only.

9. The price should be on FOR-IISc Bangalore basis in INR only.

10. IISc also reserves the right to cancel the tender at any time without assigning any reason whatsoever.

11. Indicate delivery period.

12. Order will be placed on lowest bid from technically qualified vendor.

13. The tender documents can be sent at the following address:

The Chairman  
Department of Materials Engineering  
Indian Institute of Science, Bangalore 560012  
Karnataka (INDIA)  
Attn: Prof. Satyam Suwas

## **Annexure 2: Eligibility Criteria**

### **Prequalification criteria:**

- 1. The Bidder should belong to either class 1 or class 2 supplier distinguished by their “local content” as defined by recent edits to GFR. They should mention clearly which class they belong to in the cover letter.**
  - a) Class 1 supplier: Goods and services should have local content of equal to or more than 50%.**
  - b) Class 2 supplier: Goods and services should have local content of equal to or more than 20 % and less than 50%.**
- 2. Bidders offering imported products will fall under the category of non-local suppliers. They cannot claim themselves as Class-1 local suppliers/Class-2 local suppliers by claiming the services such as transportation, insurance, installation, commissioning, training, and other sales service support like AMC/CMC, etc., as local value addition.**
- 3. Purchase preference as defined by the recent edits to GFR (within the “margin of purchase preference”) will be given to Class-1 supplier.**
- 4. MSME can seek exemption to some qualification criteria. IISc follows GFR2017 for such details.**
- 5. The Bidder must not be blacklisted/banned/suspended or have a record of any service-related dispute with any organization in India or elsewhere.**
- 6. Original Invoice, Original Warranty Certificate, Original Test Reports should be produced for all imported items from OEM (Original Equipment Manufacturer) at the time of supply of the equipment.**
- 7. Details of an experienced service engineer including contact detail should be provided in tender document.**
- 8. Bidder shall have to submit audited accounts (Balance sheet profit and loss account) of financial year 2015-16, 2016-17 and 2017-18. Audited statement must be signed and stamped by qualified chartered accounted.**
- 9. Bidder must submit Income Tax return for assessment year – 2016-17, 2017-18 and 2018- 19.**
- 10. Bidder must submit up to date sales tax or GST clearance certificate.**

# Annexure 3:

## Technical specifications

### Ultrasonic Generator Specification

11. Vibration Type	-	Ultrasonic Vibration
12. Vibration Frequency	-	15K to 25K
13. Amplitude of Vibration	-	10 to 30 micron
14. Amplitude Steps	-	4 Steps amplitude
15. Capacity	-	2000watt
16. Generator Type	-	Continuous
17. Ultrasonic Generator	-	1 Nos
18. Converter	-	1 Nos
19. Booster	-	1 nos
20. Connecting Cable	-	1 Nos

### Horn Specification:

4. Horn Size	-	Dia-100mm x Ht-150mm
5. MOC	-	Aluminum
6. Mounting Type	-	Vertical Flange Mounted

### Sample Mounting Adaptor

5. Adaptor Type	-	Adjustable Jaw Type
6. Sample Size	-	Upto 25mm Holding Capacity
7. Sample Shape	-	Square and circular shape
8. Adaptor Tilting angle	-	0-20 Degree inclination

### Adaptor Holding Mechanism

7. Mounting Type	-	Centre Mounting with Horn
8. Maximum Displacement of Holder	-	400mm
9. Displacement Direction	-	Upward and downward in Vertical direction
10. Displacement Accuracy	-	1mm
11. Upward and Downward Mechanism	-	Ball screw mechanism
12. Height Measurement	-	Calibrated Scale for height measurement

### Safety Drum:

6. Diameter	-	300mm
7. Height	-	300mm
8. Shape	-	Conical and cylindrical
9. MOC	-	SS304
10. Cover	-	Adjustable Cover

### Main Structure: Consist of Following Parts

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7. Mounting Frame for Horn
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9. Mounting for Control Panel
10. Mounting for Scale and Limit Switch and Wheels