

## Local Tender Notice

**Tender Notification Ref No.: MT/ENQ-TNDR/PAIR/IESTS-ANC/25-26/18**

The Department of Materials Engineering Indian Institute of Science, Bangalore, invites tenders for supply of **“L-DED based 5 Axis AM set up with controlled atmosphere”**.



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

February 04, 2026

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## 1. Bid schedule

1.	Tender Number	MT/ENQ-TNDR/PAIR/IESTS-ANC/25-26/18
2.	Tender Date	04/02/2026
3.	Item Description	<b>L-DED based 5 Axis AM set up with controlled atmosphere</b>
4.	Tender Type	Two bid system: (a)Technical Bid (Part A) (b) Commercial Bid (Part B)
5.	Place of tender submission	The Chair Department of Materials Engineering, Indian Institute of Science, Bengaluru 560012
6.	Last Date & Time for submission of tender	25 <sup>th</sup> February 2026, on or before 1700 hrs
7	For further Clarification	Prof. Abhik N Choudhury Department of Materials Engineering Indian Institute of Science Bangalore, Karnataka – 560012, India  Contact: 080 22933235 Email: abhik@iisc.ac.in / office.pair@iisc.ac.in

## 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. Purchase preference as defined by the recent edits to GFR (within the “margin of purchase preference”) will be given to Class-1 supplier.
3. MSME can seek exemption to some qualification criteria. IISc follows GFR2017 for such details
4. The bidder should sign and submit the declaration for Acceptance of Terms and Conditions as per - Annexure 4.
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. A declaration to this effect has to be given as per Annexure 3.
6. Necessary training to operate the procured setup and required literature support should be provided without additional cost.
7. In principle onsite installation should be free of cost. The amount of time / day committed by the engineer during installation must be clearly stated.
8. Software upgrade, if any, must be free of cost for next 5 years.
9. The vendor must assure that there are no bugs and glitches with the integration. In case of glitches or bugs at the time of installation, vendor must fix the issues in less than three days from the start date.
10. In case of hardware/software issues or support, vendor should be able to provide required solution within three days.
11. All equipment must be well calibrated before and after installation.
12. Additional quote for an annual maintenance contract should be included for the next 5 years.
13. The vendor should have a good track record of delivering such equipment at universities/research institutions (please furnish the details).
14. Please provide list of customers who have procured your equipment in last 5 years.
15. The vendor should be able to repair and maintain the equipment, once it is installed in India. No travel claims must be made by vendor for servicing during the warranty/guarantee period.
16. The system must be delivered at the earliest. The smallest lead time will be appreciated. Our expectation is shipment immediately after PO and full or part payment post installation.
17. On all systems the payment terms will be specified in the commercial proposal and is subject to negotiation.
18. The validity period of the quotation should be 90 days at least.
19. Please provide details of the number of trained personnel in India, who can service the machine.
20. Highlight the system/computer requirement to integrate the setup, if any other than specified in the specifications above.
21. The supplier will provide comprehensive support to the user for the software and instrument for a minimum period of 3 years.
22. Bidder shall have to submit audited accounts (Balance sheet profit and loss account) of last three financial years. Audited statements must be signed and stamped by a qualified chartered accountant.
23. Bidder must submit Income Tax return for last three financial assessment years.
24. Bidder must submit up to date sales tax or GST clearance certificate.

## **Vendor Eligibility Criteria:**

1. Sales Confirmation: The vendor company should provide comprehensive details regarding their **L-DED based 5 Axis AM set up with controlled atmosphere** in the last 5 years in India for multinational companies/PSUs/government organizations. The vendor should have sold the similar setup to at least 3 entities as depicted above in last 5 years in India. Furthermore, they must substantiate their claims by furnishing relevant supporting documents.
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. Terms and Conditions

#### A) Submission of Tender:

1. All documentations in the tender should be in English.
2. Tender should be submitted in two envelopes (two bid system).

a. **Technical Bid (Part-A)** – Technical bid consisting of all technical details and check list for conformance to technical specifications.

The technical proposal should contain a technical compliance table with 5 columns.

- i. The first column must list the technical requirements, in the order that they are given in the technical requirement below.
- ii. The second column should provide specifications of the instrument against the requirement. Please provide quantitative responses wherever possible with technical details in annexure.
- iii. The third column should describe your compliance with a “Yes” or “No” only. Ensure that the entries in column 2 and column 3 are consistent.
- iv. The fourth column should state the reasons/explanations/context for deviations, if any.
- v. The fifth column can contain additional remarks from the OEM. You can use this opportunity to highlight technical features, qualify response of previous columns, or provide additional details.

b. **Commercial Bid (Part-B)** – Indicating item wise price for the items mentioned in the technical bid, **as per the format of quotation provided in tender**, and other commercial terms and conditions

3. The technical bid and price bid should each be placed in separate sealed covers, superscripting on both the envelopes the tender no. and the due date. Both these sealed covers are to be placed in a bigger cover which should also be sealed and duly superscripted with the Tender No, Tender Description& Due Date.
4. The SEALED COVER superscripting tender number / due date & should reach Chair, Department of Materials Engineering, Indian Institute of Science, Bangalore – 560012, India on or before due date mentioned in the tender notice. In case due date happens to be holiday the tender will be accepted and opened on the next working day. If the quotation cover is not sealed, it will be rejected.

All queries are to be addressed to the person identified in “Section 1 – Bid Schedule” of the tender notice.

5. 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-IIEST, Shibpur** basis in INR only.
6. The Institute reserves the right to accept or reject any bid and to annul the bidding process and reject all bids at any time prior to the award of contract, without thereby incurring any liability to the affected bidder or bidders or any obligation to inform the affected bidder or bidders.
7. Incomplete bids will be summarily rejected

#### B) Cancellation of Tender:

Notwithstanding anything specified in this tender document, IISc Bangalore, in its sole discretion, unconditionally and without having to assign any reason, reserves the rights:

- a. To accept OR reject lowest tender or any other tender or all the tenders.
- b. To accept any tender in full or in part.
- c. To reject the tender, offer not confirming to the tender terms.

#### C) Validity of the Offer:

The offer shall be valid at least 90 Days from the date of opening of the commercial bid.

D) Evaluation of Offer:

1. The technical bid (Part A) will be opened first and evaluated.
2. Bidders meeting the required eligibility criteria as stated in Section 2 of this document shall only be considered for Commercial Bid (Part B) opening. Further, agencies not furnishing the documentary evidence as required will not be considered.
3. Pre- qualification of the bidders shall not imply final acceptance of the Commercial Bid. The agency may be rejected at any point during technical evaluation or during commercial evaluation. The decision in regard to acceptance and / or rejection of any offer in part or full shall be the sole discretion of IISc Bangalore, and decision in this regard shall be binding on the bidders.
4. The award of contract will be subject to acceptance of the terms and conditions stated in this tender.
5. Any offer which deviates from the vital conditions (as illustrated below) of the tender is liable to be rejected:
  - a. Non-submission of complete offers.
  - b. Receipt of bids after due date and time and or by email / fax (unless specified otherwise)
  - c. Receipt of bids in open conditions.
6. In case any BIDDER is silent on any clauses mentioned in these tender documents, IISc Bangalore shall consider that the BIDDER had accepted the clauses as of the tender and no further claim will be entertained. Further if the BIDDER is silent or does not give detail justification of their claim regarding those mentioned in technical specifications, IISc Bangalore reserves the full right to reject the tender due to non-compliance without any further discussion.
7. No revision in the terms and conditions quoted in the offer will be entertained after the last date and time fixed for receipt of tenders.
8. Lowest bid will be calculated based on the total price of all items tendered for Basic equipment along with accessories selected for installation, operation, preprocessing and post processing, optional items, recommended spares, warranty.

E) Pre-requisites:

The bidder will provide the prerequisite “**L-DED based 5 Axis AM set up with controlled atmosphere**”.

F) Warranty:

The vendor should be able to repair and maintain the equipment, once it is installed in India. No travel claims must be made by vendor for servicing during the warrantee/guarantee period. If the setup is found to be defective, it must be repaired or replaced at the cost of the bidder within 30 days of receiving written notification from IISc, Bangalore. In the event of any delay in the repair or replacement of the setup, the warranty period will be extended by a corresponding amount of time to account for the downtime.

G) Purchase Order:

1. The order will be placed on the bidder whose bid is accepted by IISc based on the terms & conditions mentioned in the tender document.
2. The quantity of the items in tender is only indicative. IISc, Bangalore reserves the right to increase /decrease the quantity of the items depending on the requirement.
3. If the quality of the software and service provided is not found satisfactory, IISc, Bangalore reserves the right to cancel or amend the contract.

H) Delivery, Installation and Training:

The bidder shall provide the lead time to delivery, installation and made functional at **IEST, Shibpur** from the date of receipt of purchase order. The setup should be delivered, installed and made functional **within 180 days (or depending upon the manufacturing of the equipment – to be mentioned in the tender)** from the date of receipt of purchase order. The supply of the items will be considered as effected

only on satisfactory installation and inspection of the system and inspection of all the items and features/capabilities tested by the **IEST, Shibpur**. After successful installation and inspection, the date of taking over of entire system by the **IEST, Shibpur** shall be taken as the start of the warranty period. No partial shipment is allowed. The bidder should also arrange for technical training to the local facility technologists and users.

I) Payment Terms:

Due to a large amount of content to be imported for the fabrication of the DED machine, an Inland letter of credit will be provided to the successful vendor, with 70% payment on full delivery and 30% payment after satisfactory installation, subject to TDS as per rules. Price basis must be on **FOR-IEST Shibpur** basis only. As per GFR, no advance payment can be made to domestic vendors unless an equal amount of bank guarantee is provided. AMC cost (if ordered), after completion of warranty period) will be released on half - yearly basis at the end of each six months subject to satisfactory services. The AMC will be comprehensive.

J) Statutory Variation:

Any statutory increase in the taxes and duties subsequent to bidder's offer, if it takes place within the original contractual delivery date, will be borne by IISc Bangalore subject to the claim being supported by documentary evidence. However, if any decrease takes place the advantage will have to be passed onto IISc, Bangalore.

K) Disputes and Jurisdiction:

Any legal disputes arising out of any breach of contract pertaining to this tender shall be settled in the court of competent jurisdiction located within the city of Bangalore, India.

L) General:

1. All amendments, time extension, clarifications etc., within the period of submission of the tender will be communicated electronically. No extension in the bid due date/time shall be considered on account of delay in receipt of any document(s) by mail.
2. The bidder may furnish any additional information, which is necessary to establish capabilities to successfully complete the envisaged work. It is however, advised not to furnish superfluous information.
3. The bidder may visit the installation site before submission of tender, with prior intimation.
4. Any information furnished by the bidder found to be incorrect, either immediately or later, would render the bidder liable to be debarred from tendering/taking up of work in IISc, Bangalore.

## 4. Technical Specifications

### Brief Technical Specification for L-DED based 5 Axis AM set up with controlled atmosphere

S. No.	Item description	Specification/ Value
1.	<b>Overall requirement</b>	<p><b>System</b></p> <p>L-DED based 5 Axis Additive manufacturing set up with controlled atmosphere chamber complete with powder feeder, IR thermal imaging set up, gas purging, gas cylinder banks, etc. along with all other necessary maintenance and operation tools and tackles required for daily operation and maintenance of the entire set up smooth and efficient manner.</p> <p>CNC System must be reconfigurable easily so that different geometries can be printed with addition of different rotary attachments, fixtures, etc.</p> <p>Software must offer scripting options in Python / other languages to enable researchers to reprogram different 3D printing strategies.</p>
2.	<b>Laser</b>	<p>3 KW Output power</p> <p>3 Years comprehensive Onsite Warranty support from Laser OEM</p> <p>Laser OEM should offer onsite warranty after 3 years with AMC charges</p> <p>Ytterbium Fiber Laser Multimode CW (Continuous Wave) and modulated (pulsed), Modulation frequency: 0 to 5 KHz</p> <p>Wavelength: 1070 nm ± 10nm</p> <p>Max. Power Instability over 8 hrs. &lt;= ± 2 %</p> <p>Power Tunability : 10 – 105%</p> <p>200 micron fiber with QBH output</p> <p>Water cooled</p> <p>Laser OEM: IPG/Coherent/nLIGHT</p>
3.	<b>Motion system</b>	<p>5 axis CNC ( XY table, Z OH/ Gantry system, 4<sup>th</sup> &amp; 5<sup>th</sup> Axis Trunnion fixed on the work table)</p> <p>XYZ build volume 500mm x 500mm x 200mm or better</p> <p>Trunnion Table diameter: 220 mm (accommodate</p>

		<p>max job build volume diameter 300mm with fixture(included)</p> <p>Payload 100 kg including trunnion table</p> <p><b>For 4<sup>th</sup> and 5<sup>th</sup> Axis trunnion</b></p> <p>Tilt about X axis -95/+95</p> <p>Rotate about Z axis 360 degree Continuous</p> <p>Ball Screw Actuator THK/Hiwin Make or equivalent with special arrangement for Dust Control using bellows</p>
4.	<b>Controller Unit</b>	<p>5 Axis Servo Controller</p> <p>Siemens / Mitsubishi/Omron/OEM equivalent with</p> <ul style="list-style-type: none"> <li>● Support for MS windows 10 And Above</li> <li>● Support for Cad Files</li> <li>● Support for simultaneous 5 axis interpolation</li> </ul> <p>Note: The Detailed technical specification sheet of CNC control should be attached with technical compliant statement.</p> <p>Institute can provide necessary documents for export compliance.</p>
5.	<b>Controlled Atmosphere chamber/ Glove box System</b>	<p>Inert enclosure gas-tight for Argon filled inert operation maintains Oxygen &amp; H<sub>2</sub>O Levels to 50 ppm or better</p> <p>Appropriate vacuum grade electrical/ pneumatic feedthroughs</p> <p>Sensors for Oxygen, moisture and vacuum gauge with digital output to be provided</p> <p>Includes laser safety package for CDRH Class 1 compliance</p> <p>Sealed Door with glove ports and safety interlocks</p> <p>Isolated Pass Thru Chamber (Antechamber)</p> <p>Process can be run in both the Controlled or Open atmosphere configuration</p> <p>Windows on three sides: Operating window on one side, viewing windows on other sides, with laser safety Glass (all three sides) for easy monitoring of printing process during operation.</p>
6.	<b>Deposition Head</b>	<p>Laser Spot diameter on specimen: 0.5 – 3 mm (Through motorized collimation)</p> <p>Recommended working distance: 12 mm to 14 mm (extreme lower edge of the head to the specimen top)</p>

	<p>Protective window control: Temperature, presence and degree of pollution</p> <p>Nozzle type: A multijet (04) coaxial annular gap nozzle with four separate powder feeds</p> <p>Max. permissible laser power: 6 kW</p> <p>Mounted with inline IR pyrometer and viewing camera</p> <p>Closed loop control for maintaining constant deposition temperature</p> <p>Cooling: water cooled through dedicated chiller</p> <p>Nozzle Material: Copper.</p> <p>NIR Coated Water Cooled Optics with min 12 KW Damage Threshold</p> <p>One set of protection optics to be provided</p>
7. <b>Powder Feed &amp; Process Gas</b>	<p>Two independent Powder Feeder with 700 CC capacity with Argon as Carrier Gas</p> <ul style="list-style-type: none"> <li>● Volumetric Powder Feed System Through Variable A.C. Drive</li> <li>● Powder Capacity Approx. : 700CC each</li> <li>● Wheel Drive: A.C. Variable 110V/220V</li> <li>● Powder Feed Rate - 2 – 40 gram/minute (possible to control by G/M code independently)</li> </ul> <p>The Powder Feeder should be supplied with following:</p> <ul style="list-style-type: none"> <li>● Service Tool Kit - 1 No</li> <li>● Felt Kit - 2 Nos.</li> <li>● ‘O’ Ring Kit - 2 Nos</li> </ul> <p>(D) Powder Feed Tube 5 meters. - 1 Nos</p> <p>Argon should be used only for the purposes of the feed and or process environment. No other machine operation like cylinder movement, valve actuation etc. should not be considered through argon gas. (supplier must need to confirm this)</p>
8. <b>Positional Accuracy and repeatability</b>	+/- 25 Microns or better
9. <b>Materials</b>	Open-Source Process and machine control Parameter to support additive manufacturing of powder-based materials which include

		<ul style="list-style-type: none"> <li>• Metal and alloys such as Fe/Ni/Ti Based Alloys, Low Alloy Steels like 4041, EN 39B, Cobalt Based alloys L605, Stellite -6/12/21, CuCrZr, Pure Nickel etc.</li> <li>• The system should be able to deposit FGMs of Ti64 and HAP and HEA's (High entropy alloys).</li> <li>• The system should be capable to deposit porous coating. It should also be able to variate or induce the porosity as needed.</li> <li>• The system should have proven process parameters for MMC cladding supporting SiC, WC, CrC, YSZ, HAP, Alumina and other Ceramics.</li> <li>• Support for the custom-made new material /material composite developments.</li> <li>• Any new type of Ni Based Alloys, Fe Based Alloys, Ti Based Alloys, Cu Based Alloys, Al based alloys, Metal Matrix Ceramics etc,</li> </ul>
10.	<b>Inert Environment for Reactive Materials</b>	<p>Controlled Atmosphere with antechamber and purging-controller, oxygen and moisture sensor with controlled heating, Hepa Filters and Support for the below parameters: -</p> <ul style="list-style-type: none"> <li>• Vacuum&lt;300 mBar</li> <li>• Purification Level Oxygen&lt;50 ppm,</li> <li>• Moisture&lt;50 ppm or better,</li> </ul> <p>02 nos. of Nitrile Gloves for the part handling from outside, without disturbing the inert environment.</p>
11.	<b>CAM Software-Additive Module with Perpetual License</b>	<p>Mastercam perpetual academic license with following features:</p> <ul style="list-style-type: none"> <li>• Should have Support for Build processor to generate process theme.</li> <li>• It should support 5 Axis motion.</li> <li>• It should have the option to change build parameters such as scanning strategies, scanning speed, and create user define build strategies and process themes.</li> <li>• Should support Inverse speed motion for 5 Axis deposition.</li> <li>• Should support Repairing or modifying old parts via multi axis overlapping.</li> <li>• Should be able to run simulation of the process.</li> <li>• The laser power should be adjustable according to the specific process requirements, such as using different power levels for the boundary and infill.</li> <li>• Simulation features, path optimization and support generation</li> </ul>

12.	<b>Operation Software</b>	<ul style="list-style-type: none"> <li>• Should be open architecture to enable addition of new sensor hardware and drivers.</li> <li>• Should support 5 axis simultaneous interpolation.</li> <li>• Should support simulation /Dry Run.</li> <li>• Should support G-code program outputs from standard CAM software like MasterCAM, etc.</li> <li>• Should support pause and restart facility</li> <li>• Should support user development of Python drives for scripting and hardware control.</li> </ul>
13.	<b>HMI</b>	<p>1 nos. PC with Core i7 CPU/ 16GB RAM / Graphics card/ 24" or more monitor with MS Office with graphics card</p> <p>2 nos. PC with Core i7 with MS Office ( One in operation + two for recording)</p>
14.	<b>Printing bed temperature adjustment</b>	From ambient to 600 Deg C. through induction based heater (manually detachable)
15.	<b>Connectivity for the extraction of data's from the system</b>	Wi-Fi/LAN/ USB port Bidder to be clearly mentioned
16.	<b>Online Monitoring system &amp; feedback control</b>	<p><b>IR based melt pool Temperature Monitoring System integrated with cladding head</b></p> <ul style="list-style-type: none"> <li>• The system should be capable of real-time measurement of melt pool temperature including thermal imaging through IR Camera</li> </ul>
17.	<b>IR Thermography System (separately mounted)</b>	<ul style="list-style-type: none"> <li>• Non-contact type IR based (compact and to be fitted within the process chamber, shall withstand the high ambient temperature of the process chamber) (OEM, Model no, to be provided)</li> <li>• During additive manufacturing of complex parts, system needs to be in use continuously for 10 hours or more at one go</li> <li>• IFOV (pixel size): 0.1 mm or less</li> <li>• LENS field of view: :FOV: 22° x 17° : Wide angle; FOV: 44° x 36° : Automatic lens identification preferred</li> <li>• Overall maximum area of detection: Entire build volume of the machine</li> <li>• Distance between camera and melting area/pool: Shall be easy adjustable (size of Field of view and IFOV(pixel size) variation with distance shall be submitted with suitable schematic)</li> <li>• Temperature Range : 800 to 2500 Deg. C</li> </ul>

- Thermal resolution: 2 Deg C or better
- Frame rate: 1 kHz or more, Frame rate shall be adjustable Bidder to provide frame rate vs. resolution matrix
- Surrounding environment Protection for camera and accessories: To be provided to secure the accessories from high heat, laser radiation, fine powder particle and other gases and vapour produced during processing : Protective window lens to be provided (can be considered as sacrificial spare item) to protect the main camera lenses and element.
- Analysis requirement: Thermography with thermal cycle analysis, thermal image analyzer in both video and still mode  
Supply of 02 no. Dedicated suitable PC need to be considered as analysis station for storage capacity, data acquisition and analysis software licenses
- Communication between camera and PC: LAN/Ethernet
- Control and operation of camera: : From remote desktop placed outside of system cabinet : Motorized (auto focus) and provision for manual focus
- Emissivity correction: Adjustable (Range to be provided by bidder)
- Measurement and software analysis capability: To support all standard techniques like lock-in, pulse, Transient, Vibro-thermography, thermal stress analysis (TSA) based thermography methods etc. : Functions for performing automated measurements :Shall have advanced pulsed and transient evaluation methods (maximum contrast method, e-function approximation, square root approximation and pulsed phase analysis methods)with the capability of calculation and display of attributes and derivation of attributes.
- Sensitivity: : NETD @ 25°C < 25mK
- Detector Pitch: 15  $\mu$ m or better
- Detector resolution: Minimum 764 x 480 pixels
- Well Capacity: 6.5 M electrons or better
- F number: f/3 or better
- Video format output: Min 1080 x 720 pixels
- Calibration: high temperature calibration up to 2000° C with necessary filter
- Optics Transmission Correction: Automatic, based on signals from internal sensors
- Reflected apparent temperature correction: Automatic
- Measurement Corrections: Global object parameters
- External Optics & Windows Correction:

		Automatic, based on input of optics/window transmission and temperature <ul style="list-style-type: none"> <li>• Camera Carry box: Safe carry box for the IR camera and lenses shall be provided</li> </ul>
18.	<b>Flame proof Vacuum Cleaner</b>	Vacuum cleaner required of ATEX grade.
19.	<b>Sieving Station</b>	Electromagnetic Sieve Shaker Continuous, Intermittent and Logic Modes Test Sieve (Micron): (Mesh 45,63,90,120)
20.	<b>Start Up Kit</b>	<ul style="list-style-type: none"> <li>• 1 x 125mm Dia ,1x 75 mm Dia, 1x 100 mm Dia, 3 X (250x 250 mm) SS Plate, 2 X (250x 250 mm) Ti64 Plate, 2 X (250x 250 mm) Ni Plate to be provided.</li> <li>• Nitrile Gloves, N95 Masks, Hand Tools such as taping tools, Files Etc.</li> <li>• Laser Safety Goggles-4 Qty</li> </ul>
21.	<b>Machine capability Demonstration</b>	Vendor can be asked to demonstrate the working system of the similar 5 axis configuration at their customer site or their plant.
22.	<b>Warranty and maintenance</b>	3 years comprehensive on-site warranty along with periodic maintenance of the machine  3 years onsite Laser warranty.
23.	<b>Electrical input</b>	One main socket of 3 phase 415 V and single phase 230 V 50 Hz AC supply will be provided. All the necessary PDB, suitable UPS and isolation transformer will be in the bidder scope.
24.	<b>Misc. post processing Tools</b>	Bench Vice, Tool Rack with general purpose Tools Make, 600 x 600mm Granite Top with stand, In size Measuring Tools, Digital Vernier calliper (300 mm and 150 mm) Vertical Height Gauge, Grinding Wheel etc. shall be considered
25.	<b>Argon Gas Bank</b>	SS-316 Twelve Cylinder Manifold (02 nos. each of 06 cylinders connected parallel) System with High Pressure Techno Wheel Valve SS-316 Non-Return Valve SS 316 Double Stage High Pressure Regulator 200-2 Bar (for both the manifold) SS 316 gate valve arrangement for each cylinder for quick change over Supply of 24 nos. of new cylinder (12 used+12 spares) with UHP argon gas to be used for the process Gas bank will be located outside of the machine room and accordingly the complete pipeline ( around 200 feet) will be under the vendor scope
26.	<b>Chiller</b>	Separate chiller to be provided for the laser unit and deposition head
27.	<b>Materials Recipes</b>	Recipes to be provided for various powders.
28.	<b>Overall Dimension and weight of the machine</b>	Overall dimension of the machine along with the working space requirement and total weight To be clearly mentioned by the bidder. General arrangement drawing of the set up need to

		be submitted along with the bid. Tentative no of transport packages and their gross weight and dimension need to be provided.
29.	<b>Insurance Packaging and freight</b>	Insurance packaging and freight will be under the supplier scope. Unloading at site with suitable equipment, unpacking and installation & commissioning following necessary safety standard will be under the supplier scope. Necessary insurance during unloading, installation and commissioning at IEST Shibpur site need to be arranged by the supplier
30.	<b>Safety Features</b>	Full compliance with the safety requirements prescribed by the International Directives for Industrial Machineries. Closed body structure with front panel lock. Sensor system to stop the machine in presence of obstacles to the movement of the printing bed. Emergency Stop button.
31.	<b>Capability to produce functional model</b>	Supplied machine must be capable of produce functional 3D model.
32.	<b>Instruction Manual</b>	Soft & hard copy of Instruction Manual (Operation and maintenance) to be provided
33.	<b>Installation, commissioning, Training (both Hardware and Software) and hand holding</b>	Included Time line must be indicated by bidder
34.	<b>Bidder Qualification Criteria:</b>	<p>Detailed technical <b>literature / data sheet</b> must accompany quotations, failing which quotations are liable to be rejected.</p> <p>Bidder should be OEM or OEM authorized Indian representative. In case of authorized representative: OEM authorization to be Provided.</p> <p>In case of technical collaboration for the offered technology (L-DED) the bidder must furnish technical collaboration/authorization/ transfer agreement from the original Technology developer, failing which quotations will be rejected.</p> <p>Bidder should have a proven record of sales of same or similar category product to reputed Government, research organizations and educational institutes.</p> <p>Company must attach copies of similar orders that have been executed and provide copy of reference letters from minimum 3 CFTIs, government organizations, Research Organizations, educational institutes. Relevant proof of the same should be enclosed.</p> <p>Preferably the vendor should have local support with local office / technician.</p> <p>Service to be provided within 72 hours of intimation.</p>

## **5. Technical Bid**

The technical bid should furnish all requirements of the tender along with all annexures in this section and submitted to

The Chair,  
Department of Materials Engineering  
Indian Institute of Science, Bangalore – 560012

Kind Attn: Prof. Abhik N Choudhury

## **Annexure-1**

The bidder must provide the following mandatory information & attach supporting documents wherever mentioned:

### **Details of the Bidder**

Sl. No	Items	Details
1.	Name of the Bidder	
2.	Nature of Bidder (Attach attested copy of Certificate of Incorporation/ Partnership Deed)	
3.	Registration No/ Trade License, (attach attested copy)	
4.	Registered Office Address	
5.	Address for communication	
6.	Contact person- Name and Designation	
7.	Telephone No	
8.	Email ID	
9.	Website	
10.	PAN No. (attach copy)	
11.	GST No. (attach copy)	

Signature of the Bidder

Name  
Designation, Seal

Date:

## **Annexure-2**

### **Declaration regarding experience**

To,  
The Chair,  
Department of Materials Engineering  
Indian Institute of Science, Bangalore – 560012

Ref: Tender No: XXXXXXXXX Dated: XXXXX

### **L-DED based 5 Axis AM set up with controlled atmosphere**

Sir,

I've carefully gone through the Terms & Conditions contained in the above referred tender. I hereby declare that my company / firm has XXXXXX years of experience in **L-DED based 5 Axis AM set up with controlled atmosphere**.

(Signature of the Bidder)

Printed Name

Designation, Seal

Date:

## Annexure-3

### Declaration regarding track record

To,  
The Chair,  
Department of Materials Engineering  
Indian Institute of Science, Bangalore – 560012

Ref: Tender No: XXXXXXXX      Dated: XXXXX

#### **L-DED based 5 Axis AM set up with controlled atmosphere**

Dear Sir,

I've carefully gone through the Terms & Conditions contained in the above referred tender. I hereby declare that my company/ firm is not currently debarred /blacklisted by any Government / Semi Government organizations / institutions in India or abroad. I further certify that I'm competent officer in my company / firm to make this declaration.

Or

I declare the following

Sl.No	Country in which the company is Debarred /blacklisted / case is Pending	Blacklisted / debarred by Government / Semi Government/Organizations /Institutions	Reason	Since when and for how long

(NOTE: In case the company / firm was blacklisted previously, please provide the details regarding period for which the company / firm was blacklisted and the reason/s for the same).

Yours faithfully

(Signature of the Bidder)

Name

Designation, Seal

Date:

## **Annexure-4**

### **Declaration for acceptance of terms and conditions**

To,  
The Chair,  
Department of Materials Engineering  
Indian Institute of Science, Bangalore – 560012

Ref: Tender No: XXXXXXXX      Dated: XXXXX

### **L-DED based 5 Axis AM set up with controlled atmosphere**

Dear Sir,

I've carefully gone through the Terms & Conditions as mentioned in the above referred tender document. I declare that all the provisions of this tender document are acceptable to my company. I further certify that I'm an authorized signatory of my company and am, therefore, competent to make this declaration.

Yours faithfully,

(Signature of the Bidder)

Name

Designation, Seal

Date:

## **Annexure - 5**

### **Details of items quoted:**

a. Company Name	
b. Product Name	
c. Part / Catalogue number	
d. Product description / main features	
e. Detailed technical specifications	
f. Remarks	

### **Instructions to bidders:**

1. Bidder should provide technical specifications of the quoted product/s in detail.
2. Bidder should attach product brochures along with technical bid.
3. Bidders should clearly indicate compliance or non-compliance of the technical specifications provided in the tender document.

## 6. Commercial bid

**The commercial bid should be furnished with all requirements of the tender with supporting documents as mentioned under:**

S.No	Description	Cat. Number	Quantity	Unit Price	Sub total
1.	Essential items noted in the technical specification				
1.a	... (details of essential items)				
1.b	...				
2.	Optional items noted in the technical specification				
2.a	... (details of Optional items)				
2.b	...				
3.	Accessories for operation and installation				
4.	All Consumables, spares and software to be supplied locally				
5.	Warranty (2 years)				
6.	AMC 2 years beyond warranty				

### Any additional items

S.No	Description	Cat. Number	Quantity	Unit Price	Sub total

Addressed to

The Chair,  
Department of Materials Engineering  
Indian Institute of Science, Bangalore – 560012

## 7. Checklist

**(This should be enclosed with technical bid- Part A)**

**The following items must be checked before the Bid is submitted:**

1. Sealed Envelope “A”: Technical Bid

1. Section 5- Technical Bid (each page signed by the authorized signatory and sealed) with the below annexures:
  - a. Annexure 1 : Bidders details
  - b. Annexure 2: Declaration regarding experience
  - c. Annexure 3: Declaration regarding clean track record
  - d. Annexure 4: Declaration for acceptance of terms and conditions
  - e. Annexure 5: Details of items quoted
2. Copy of this tender document duly signed by the authorized signatory on every page and sealed.

2. Sealed Envelope “B”: Commercial Bid

Section 6: Commercial Bid

Your quotation must be submitted in two envelopes: Technical Bid (Envelope A) and Commercial Bid (Envelope B) super scribbling on both the envelopes with Tender No. and due date and both of these in sealed covers and put in a bigger cover which should also be sealed and duly super scribed with Tender No., Tender description & Due Date.