

PUNJABI UNIVERSITY PATIALA

(Entrepreneurship, Innovation and Career Hub-EICH)

Short Term E-Tender Notice

E-Tenders on item rate basis through electronic tendering process are invited by the undersigned from the Original Equipment Manufactures/Approved and eligible Manufactures/Authorized Distributors/Dealers for the Purchase of Multi-Material FDM Based 3d Printing Machine, fulfilling the eligibility criteria mentioned herein which shall be uploaded & received on www.tenderwizard.com/PUNJAB

1. Last date and Time for receipt of Tender online : Date 24-08-2022 17:00pm
2. Time and date of opening Technical bid : Date 26-08-2022 11:00 am
3. Time and date of opening Financial bid : will be conveyed on the website upon verification of technical bid documents

| <i>S.No</i> | <i>Item</i> | <i>Earnest Money (Refundable)</i> | <i>Tender Fees (Non-refundable)</i> | <i>Bid processing fees (Non-refundable)</i> |
|-------------|---|---------------------------------------|---|---|
| 1. | Supply of Multi-Material FDM Based 3d Printing Machine at Punjabi University Patiala. | 24,000/- | 2360/- | 2360/- |

A bidder who has not obtained the User ID and password for participating in e-tendering may obtain the same by registering in the e-procurement portal www.tenderwizard.com/PUNJAB. The tenderers once registered can participate in any of the department tenders. For any clarification contact, 0172-5035985, 8146699866 or e-mail : etenderhelpdeskpb@gmail.com, pavitar.s@etenderwizard.com

All other details can be seen in the bidding document.

Terms and conditions:

1. The tender fees and earnest money should be paid through e-payment only. (IPG(Debit & Credit), Net banking & NEFT/OTC only).
2. Tender processing fee should be paid through e- payment (Internet Payment Gateway (Debit & Credit), Net banking & National Electronic Funds Transfer/OTC only).
3. The Tender documents shall be uploaded in 2 folders.
 - (i) **Folder-A:** Shall contain pre qualification documents such as Registration, GST No., PAN No., Income Tax Return, and Non Black list Self certificate etc uploaded on website.
 - (ii) **Folder-B:** shall contain financial bid on the prescribed form.
4. In case earnest money of the required value is not deposited, the bids will not be considered and rejected straightaway.
5. The folder-A shall be opened only of those bidders whose earnest money is found to be in order.
6. The folder –B shall be opened only of those bidders whose technical bid is found fit.
7. The final selection of the bidder for the supply of the equipment and consumables will be made on the basis of Bid Evaluation Procedure as per Annexure A.
8. Corrigendum /Addendum/Corrections, if any, will be published on the web site only. Firm will have to check the website regularly for any update.
9. Tender will be opened in the Office of Director, Computer Centre, at Punjabi University, Patiala.

PRE-QUALIFICATION REQUIREMENTS:-

1. Manufacturers/Suppliers/Authorized Distributors/Dealers etc. can participate.
2. The bidders will have to provide their own PAN and GST no. wherever applicable.
3. The bidders shall submit copies of income tax return for the last 2 years.
4. The bidders shall also submit Self certification that they have not been debarred/blacklisted by any Govt./ Semi Govt. Organization or any Corporation at any stage.

Other Terms and Conditions:

1. University reserves the right to inspect the material to be received from the bidder/suppliers.
2. Prices should be inclusive of all taxes and levies in INR, F.O.R Punjabi University Patiala.
3. All items to be supplied must be branded and shall be amply supported onsite directly by OEM. All Return Material Authorization (RMA) shall be in name of Punjabi University, Patiala.
4. The equipment is to be made available/ installed within 4-6 weeks from date of placing confirmed Purchase Order along with all the bills.
5. If there is holiday on the receipt/opening day of the tender, the tender shall be received / opened on the next working day at the same time.
6. The Registrar, Punjabi University reserves the right to reject the tender without assigning any reason before/after opening of the tenders and the tenderers shall have no right or any claim whatsoever for the same on this account.
7. The order for quantity of different items can be increased or decreased. The Suppliers/ Tenderers shall have no right or any claim what so ever for the same on this account.
8. The rate quoted by the bidder shall be inclusive of all taxes levied by Central Govt. or State Govt. Authority including their variations as notified by the Concerned Authority from time to time and also of all the new taxes and levies that may be imposed.
9. The bidder shall comply with proper by-laws and legal orders of the local body or authority under the jurisdiction of which the supply is executed and pay all fees and charges for which he may be liable. Nothing extra shall be payable by the University on this account.
10. The quoted rates shall be valid for full time limit.
11. Bidder will supply the material on quoted rates which include F.O.R., Loading, Unloading, stacking and inclusive of all taxes.
12. An agreement will have to be signed with the Registrar, Punjabi University Patiala within 3 days of issue of supply order.
13. In case of failure of supply of material as per ordered specifications, the University reserves the right to reject the supply order/ imposition of penalty/ forfeiture of security deposited by the bidder.

14. Performance Bank Guarantee (PBG)

In case the total order value of items becomes Rs. 5.0 lakh or above, 10% of the cost price in the form of Bank Guarantee or FDR pledged in the favor of "The Registrar, Punjabi University, Patiala" is required at the time of installation of the equipment which should remain valid at least during the warranty period plus 3 months.

15. Payment terms

The payment will be made against invoice/bill after delivery and installation of the equipment in INR currency only.

16. Acceptance of Terms and Conditions

Bidders must confirm the acceptance of all the terms and conditions of this tender notice. Any non-acceptance or deviation from the terms and conditions must be clearly mentioned. However, tenderers must note carefully that any conditional offer or any deviation from the terms and conditions of this tender notice may render the quotation liable for rejection.

17. Power supply

The equipment should be quoted only for 220 volts and 50 Hz supply.

18. Duly signed and stamped certificate of minimum 2 years comprehensive on-site warranty as per Annexure B should be attached with the technical bid. Successful firm will be required to agree for payment of penalty for exceeding permissible downtime during guarantee/warranty period.

19. Country of origin of the quoted item should be mentioned in the offer in case of imported item.

20. Customs Duty or Excise Duty:

Punjabi University Patiala is exempted from the payment of Customs Duty/Excise Duty. CDEC/EDEC with DSIR Certificate will be provided along with the order (if applicable).

21. Service Facility:

Bidder should mention about the service set up in India and how capable they are to provide after sales services.

22. Installation and Training:

It should be included by the bidder, in the offer without any extra cost.

23. Banker's details:

Name and address of the banker of the bidder/company should be mentioned.

24. Reference of supply:

Name and contacts details of the premier educational Institutes where the quoted equipment has been installed in India should be attached as per Annexure-C during the last 3 years. Copies of at least two purchase orders may be attached (if possible). Punjabi University Patiala reserves the right to inspect the equipment for its actual performance in any of the listed Institute. The list of installations with contact details for the last 3 years must be provided.

25. Arbitration

In the event of failure to carry out the contractual obligations within the stipulated period or extended period and termination of the contract for any reason, violation of warranties etc., Punjabi University Patiala shall have the right to carry out the unfinished obligation at the exclusive cost and risk of the bidder/firm, after due notice and the difference so accrued shall be recoverable from the bidder/firm.

25.1 The provision of the Arbitration and Conciliation Act, 1996 or as at the relevant time and of rules framed there under and any statutory modifications thereof shall be deemed to apply and be incorporated in this agreement.

- 25.2 Upon every or any such reference, the costs of any incidentals to the reference and award(s) respectively shall be at the reasonable discretion of the Arbitrators or in the event of their not agreeing, of the mediator appointed by them who may determine the amount thereof or direct the same to be fixed as between solicitors and client or as between parties and shall direct by whom and in what manner the same shall be borne and paid.
- 25.3 Panel of arbitrators will be provided by Punjabi University Patiala out of which the bidder will have to select one.
- 25.4 The bidder shall have no objection if the officer who has dealt with the case at any stage is nominated as an arbitrator. Further, that one of the arbitrator's shall be Accounts Expert.
- 25.5 In case of vacancy being caused due to resignation, death or incapacity of the arbitrator(s) to function as such, the same shall be provided in the aforesaid manner and the new arbitrator(s) shall proceed from the stage at which vacancy is caused.

26. Jurisdiction:

The Courts of Patiala alone will have the jurisdiction to try any matter, dispute or difference between the parties arising out of this tender/contract. It is specifically agreed that no Court outside and other than Patiala court shall have jurisdiction in the matter.

27. Force Majuere:

Any failure of omission or commission to carry out the provision of this contract by the supplier shall not give rise to any claim by one party, one against the other, if such failure of omission or commission arises from an act of God; which shall include all acts of natural calamities such as fire, flood, earthquake, hurricane, or any pestilence or from civil strikes, compliance with any statute and/or regulations of the Government, lockouts and strikes, riots, embargoes or from any political or other reason beyond the supplier's control including war (whether declared or not) civil war or stage of insurrection, provided that notice of the occurrence of any event by either party to the other shall be given within two weeks from the date of occurrence of such an event which could be attributed to Force Majuere conditions.

28. Risk & Cost

In the event of failure to carry out the contractual obligations, within the stipulated period or extended period and determination of the contract for any reason, violation of warranties etc. the Punjabi University Patiala shall have the right to carry out the unfinished obligation at the exclusive cost and risk of the bidder, after due notice and the difference so accrued shall be recoverable from the bidder.

29. The material found defective upon opening by the supplier representative in presence of Central stores personnel/indenter of Punjabi University Patiala or not as per tendered specifications will be lifted back at the cost and risk of the supplier. The material lying in the Punjabi University Patiala premises would be at supplier's risk and cost.

30. In case of any clarification regarding tender contact at phone no. **9815338282**.

Director,
Entrepreneurship, Innovation
and Career Hub
Punjabi University,

ANNEXURE - A

BIDS EVALUATION PROCEDURE

Technical Bid and Financial Bid

Punjabi University's purchase committee will evaluate the technical and financial bids. Decision of the committee would be final and binding on all the bidders.

Evaluation of Technical bid

- (i) Before submission of the technical bid, bidders are expected to meet the qualifying criteria (Requirements) as mentioned in the tender document. Bidders failing to meet these criteria or not submitting requisite supporting documents/documentary evidence for supporting the eligibility criteria are liable to be rejected summarily.
- (ii) The technical bids must be complete in all respect and should cover the entire scope as stipulated in the tender document.
- (iii) The bid should cover the entire scope of technical specifications.
- (iv) Floor plans for the processing line to be laid out by vendor.
- (v) Information as provided in Annexure C.

In case of ties after financial opening, L1 will be finalized as per the following:

The bid providing the highest period of warranty, will be finalized.

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CERTIFICATE OF WARRANTY

- i) I/We certify that the warranty shall be for a period of _____ years comprehensive onsite warranty starting from the date of satisfactory installation, commissioning and handling of the equipment and of the works conducted therewith covered under the supply order in working order. During the warranty period, I/we shall provide free "after sale service" and the replacement of any part(s) of the equipment or rectification of defects of work of the equipment will be free of cost. The replacement of the parts shall be arranged by us, at our own cost and responsibility. We undertake that the above warranty shall begin only from the date of satisfactory and faultless functioning of the equipment for 60 days at Punjabi University Patiala premises. The benefit of change in dates of the warranty period shall be in the interest of Punjabi University, Patiala.
- ii) During the warranty period, we shall provide at least one preventive annual maintenance visit.
- iii) Uptime Guarantee: During the warranty period, we will be responsible to maintain the equipment in good working conditions for a period 328 days (i.e. 90% uptime) in a block of 365 days.
 - (a) All complaints will be attended by us within 2 weeks of receipt of the complaint in our office.
 - (b) In case there is delay of more than 2 weeks in attending to a complaint from our side then you can count the number of days in excess of the permissible response time in the downtime. The above said response time of 2 weeks for attending to a complaint by us will not be counted in the downtime.
 - (c) Penalty: We shall pay a penalty equivalent to 0.1% of the FOB value of the equipment for every week or part thereof delay in rectifying the defect.

Note: The right to accept the reason (s) for delay and consider reduction or waive off the penalty for the same shall be at the sole discretion of Registrar, Punjabi University Patiala.

- iv) We certify that the equipment being quoted is the latest model and that spares for the equipment will be available for a period of at least 10 years and we also guarantee that we will keep the organization informed of any update of the equipment over a period of 10 years.
- v) We guarantee that in case we fail to carry out the maintenance within the stipulated period, Punjabi University Patiala reserves the right to get the maintenance work carried out at our risk, cost and responsibility after informing us. All the expenses including excess payment for repairs/maintenance shall be adjusted against the Performance Bank Guarantee. In case the expenses exceed the amount of Performance Bank Guarantee, the same shall be recoverable from us with/without interest in accordance with the circumstances.
- vi) We shall try to repair the equipment at Punjabi University Patiala premises itself. However, the equipment will be taken to our site on our own expenses in case it is not possible to repair the same at Punjabi University Patiala. We shall take the entire responsibility for the safe custody and transportation of the equipment taken out for repairs till the equipment is rehabilitated to the Punjabi University Patiala after repair Any loss of equipment or its accessories under its charge on account of theft, fire or any other reasons shall be at our sole risk and responsibility which will be compensated to Punjabi University Patiala for such losses at the FOB/CIF value for the damaged/lost equipment/part, including accessories.
- vii) We undertake to perform calibration after every major repair/breakdown/taking the equipment for repair out of Punjabi University Patiala premises.
- viii) In case of extended warranty, we undertake to carry out annual calibration of the equipment.
- ix) We guarantee that we will supply spare parts if and when required on agreed basis for an agreed price. The agreed basis could be an agreed discount on the published catalogue price.
- x) We guarantee to the effect that before going out of production of spare parts, we will give adequate advance notice to you so that you may undertake to procure the balance of the life time requirements of spare parts.
- xi) We guarantee the entire unit against defects of manufacture, workmanship and poor quality of components.

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PROFORMA FOR USER/CLIENT LIST

| S. No | Name & full address of purchaser | Purchase Order No. & Date | No. of units (Qty) | Model No. & date of installation | Contact person with cell phone and e-mail id |
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Technical specifications

Equipment / Item: Supply of Multi-Material FDM Based 3d Printing Machine at Punjabi University Patiala.

Scope: This machine will be used for making Functional prototypes, Patterns for castings, End use parts, Tooling and moulds etc. by the start-ups, entrepreneurs, students and researchers.

Technical specifications: The required machine should have the following specification

| S. No. | Description | Parameter Value |
|--------|-------------------------------------|---|
| 1 | Additive Manufacturing Technology | Fused Deposition Modelling or equivalent additive manufacturing technology suitable for printing industrial thermoplastic materials |
| 2 | Print Job Envelop Size (Build zone) | 500 x 500 x 500 mm (XYZ) |
| 3 | Number Of Extruders | Machine should have minimum two independent extruders for deposition of model and support materials. |
| | | Provision of replacement of customized extruders / nozzles should be available |
| 4 | Extruder nozzles diameter | 0.4 mm, 0.6mm, 0.8 mm |
| 5 | Extruder Temperature | 400 °C or higher, with precision temperature control system |
| 6 | Model Materials | The machine should be compatible with all standard engineering thermoplastic material available in the open market in spool form. |
| | | PLA, ABS, HIPS, PET-G, Polycarbonate (PC), Fiber filled thermoplastics, Flexible Filaments, PC-ABS, Chopped carbon filament, TPU etc. |
| | | NOTE: Machine employing only proprietary spools / proprietary material cartridge will not be accepted |
| 7 | Consumables | Apart from standard starter kit by the supplier, following set of consumables is to be supplied in the package: <ul style="list-style-type: none"> i) ABS= 10 kg ii) ABS+ = 5kg iii) PC-ABS= 2kg iv) ASA= 5kg v) PLA = 10kg vi) Nylon 6= 2 kg; Nylon 12= 2kg vii) Polycarbonate = 2 kg viii) TPU= 3kg ix) PET-G = 3kg x) Carbon fibre PLA= 1kg xi) Carbon fibre PET-G= 1kg xii) Carbon fibre Nylon = 1kg xiii) Polypropylene = 1kg xiv) HIPS = 3 kg |
| | | Support Material spools =3 Nos |
| | | Solvent for removing support material =5 Nos packs |
| | | Build Plates = 2 Nos |
| | | Nozzles set (all sizes) = 10 set Sensors, extruder heater = 10 pc |
| 8 | Typical Material features | Material should be available in different colours. |
| | | Material should have shelf life of minimum 12 months |
| | | Materials should be supplied in sealed / contamination free package |
| 9 | Support Material | Non-Hygroscopic soluble material – HIPS or equivalent |
| 10 | Filament diameter | 1.75 mm (Nominal) |
| 11 | Gantry | Cartesian coordinates type |
| | | High precision XYZ motorized gantry system |
| 12 | XY movement | Extruders mounted on Motorized rails moving in X/Y coordinates |

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| | | High Precision Linear Guide Rails with 20 micron or better positional accuracy |
| | | Stable- vibration free X/Y gantry |
| 13 | Z movement | Precision motorized Z axis movement with ball screw mechanism |
| 14 | Filament sensor | A filament sensor that continuously monitors and actively repairs extruder clogging, thereby ensuring zero failed prints |
| 15 | Autobed | Machine should have completely autonomous bed levelling system that can compensate for bed tilt and print. |
| 16 | On the go part stop | Machine software should be capable of stopping the print on the go for any of multiple objects on the platform (Without stopping the complete print) |
| 17 | Power resume | Machine with capability that can resume the print after power failure |
| 18 | Adaptable flow rate | Machine should be capable of handling variable flow rate and variable temperature as per 3D CAD geometry for better component strength |
| 19 | Layer Precision | 100 microns or better (programmable) |
| 20 | Print Accuracy | 0.15 % of geometry or better |
| 21 | Print Travel Speed | 300 mm/sec or better |
| 22 | Build Rate | 30 cm ³ / hour or better |
| 23 | Positioning accuracy | 20 microns or better |
| 24 | Build environment | Either heated chamber or heated bed or both with controlled heating |
| | | For heated chamber: required temperature 75 ± 5 °C For heated Bed: required temperature 120 ± 5 °C |
| 25 | Build Plate | Replaceable Toughened Glass |
| 26 | Machine enclosure | Fully covered chamber |
| | | Material feeding system should also be covered. |
| | | Provision of transparent Door for print visualization |
| | | Enclosure should have air filters for safe exhaust air quality |
| 27 | Enclosure material | Anodized aluminium or powder coated steel |
| 28 | HMI | Touchscreen based dedicated HMI for operations and maintenance. (If dedicated HMI is not available, machine compatible computer hardware should be supplied as part of package) |
| 29 | Other hardware features | Filament sensor for detection of filament movement, filament breakage etc |
| | | Nozzle wiping – before and after printing |
| | | In built Camera connected to HMI or PC based software for monitoring of printing process |
| 30 | Software | PC based software with perpetual license |
| | | Flexibility of customization of the software for any future modification required by end user |
| 31 | Essential Software feature | Solid model Input format: STL |
| | | Compatible with CAD tools like Solidworks – Direct print option from CAD tools |
| | | Capability to process STL files generated through 3D scanners/ reverse engineering methods. |
| | | Automatic model slicing and Layer visualization |
| | | Automatic support generation with customization features |
| | | Customization of sparse build |
| | | Large part build feature – by sectioning and feature alignment capabilities |
| | | Automatic selection of process parameters for selected materials / nozzles etc. |
| | | Choice of orientation, layer thickness etc. |

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| | | Part packing and nesting feature |
| | | Estimation of material consumption |
| | | Estimation of build time |
| | | Automatic generation of honeycomb like lattice structure from a solid as input – customizable density |
| | | Pause and print capability |
| | | Diagnostic features - Alarms and interlocks for critical process and machine parameters |
| | | Machine data logging including errors / alarms etc. |
| | | Auto Job recovery / repair for uninterrupted printing in case of multi component printing. |
| | | Ability to Support detailed views of build model, tray, and slice preview for making necessary adjustments before printing job |
| 32 | Software Compatibility | Microsoft Windows 7 or above |
| 33 | Pause Print Option | Pause and print operations should be allowed to accommodate external material/ objects as an insert in the print job |
| 34 | Connectivity | SD card, USB, LAN and Wi-Fi |
| 35 | Noise level | Less than 65 dB |
| 36 | Power | 220VAC single phase 50 Hz |
| 37 | Accessories | Materials loading/ handling tools/ accessories if required |
| | | Pack of post processing kit/ equipment, any other essential tools required for machine operation should be supplied as standard accessories. |
| | | Basic toolkit – for changing nozzle, sensors, spools and basic maintenance |
| | | End User will provide table and power supply only – any other item required for operation of the equipment to be considered as standard accessory and should be included in the scope of supply |
| 38 | Documentation | Operations and maintenance manual |
| | | Site preparation guide – with utilities requirement |
| | | Datasheets of materials and consumables |
| | | Material Safety Data Sheet of chemicals/ materials |
| | | Document certifying that the system offered is brand new and not refurbished/ remanufactured |
| | | Authorization Certificate from OEM, if equipment is sold by authorized dealer |
| | | Bill of Materials to prepare supply order |
| 39 | Conformity Certification | Mandatory CE certification Mandatory ISO Certification Made in India - Preferred |
| 40 | Installation, commissioning, training | Free installation, commissioning and training at customer's place for minimum 3 days |
| 41 | Warranty | Minimum Two Years – fully onsite comprehensive warranty |
| | | Faulty components should be repaired or replaced at free of cost |
| | | Software upgrades within warranty period to be given free of cost |
| | | Labour charges, shipment, packing forwarding charges etc. will not be paid during warranty period |
| 42 | Testimonials and feedback from existing customers | Supplier should have installed minimum 05 such machines in Government organizations in India. List of installation of machine with similar specifications to be provided with contact details such as name, postal address and email address |
| | | Customer testimonial can also be provided if available |
| | | We may contact the customers for their feedback about the equipment supplied to them. If feedback from multiple customers are found to be negative, the system may be rejected during technical evaluation. |

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| 43 | AMC and Support | Vendor should be willing to take up comprehensive or non-comprehensive AMC of the system after warrantee period |
| | | Cost of both AMC types should be mentioned separately in quotation |
| | | Vendor should be able to commit minimum 10 years of spares and service support guarantee after installation and commissioning of the system |
| | | List of essential spares and consumables with cost estimate should be mentioned separately in quotation |
| 44. | Other Requirements | OEM should be ISO 9001-2015 certified with a minimum existence of 3 years in the industry. (Documentary Proof Required) |

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