Department of Aerospace Engineering

April 3, 2018

Quotation notice

Sealed quotations are invited from the authorized dealer/distributors by undersigned, for creation of Multimaterial Laser Sintering System using the following two items: 1) Selective Laser Sintering (SLS) 3D Printer, and 2) Composite (Multimaterial) 3D Printer.

The detailed specifications for these are appended below. The quotations have to reach in the Aerospace Engineering Department on or before 24/4/18.

Enquiry No. : **IITK/AE/ABHI/18/01**
Opening date : **1000hrs, 03/04/18**
Closing date : **1500hrs, 24/04/18**

SELECTIVE LASER SINTERING (SLS) 3D Printer

Technical specification for SLS technology 3D Printer	
Quantity: 01 No.	
Description	**Specification**
Technology	Benchtop Selective Lesser Sintering (SLS) Technology 3D Printer
Build Volume	165x165x320mm(XYZ)
Build Speed	10mm/hour or better
Layer Thickness	100 micron or better
Scan Speed	2000 mm/sec
Laser Type	Fiber rated to >10,000/- hrs
Laser Power	10 W
Laser wavelength	1064 nm
Laser spot Size	200 µm (FWHM)
Material	Nylon 12 and Nylon 11
Build Chamber	Removable to ensure continuous printing
Processing station	Processing station and standard accessories to be quoted separately

COMPOSITE (MULTIMATERIAL) 3D PRINTER

Technical Specification Composite 3D Printer	
Quantity : 01 No.,	
DESCRIPTION	The quoted 3D printer should be capable of industrial-scale printing of incredibly strong parts with precision sensing systems. The quoted printer should combine the benefits of continuous fiber reinforcement for parts as strong as metal with advanced "build as designed" sensors and the high quality surface finish.

PRINTING TECHNOLOGY	Continuous Fiber Fabrication (CFF)
BUILD VOLUME	330 mm x 270 mm x 200 mm
PLASTIC MATERIALS	Onyx or equivalent Matrix material
FIBER MATERIALS	Carbon Fiber Fiberglass Kevlar HSHT (High-Strength High-Temperature Fiberglass)
IN PROCES INSPECTION PARAMETERS	50 micron beam diameter 1 micron Z resolution
Z LAYER RESOLUTION	50 micron
BED LEVELLING	Automatic. Laser scan for bed topography to compensate elevation changes and compensation for smooth printing with accurate dimensioning.
PRINTER CONNECTIVITY	WiFi, Ethernet, USB Flash Drive

SOFTWARE FEATURES	• Single Sign-On
	• Two-Factor Authentication
	• Organization Admin Portal
	• Early Access to New Features
	• Supported OS Mac OS 10.7 Lion +, Win 7+, Linux2
	• Supported Browser Chrome 3.0+
	• Supported Files .STL
	• Auto queuing of slicing and printing
	• Fibre laying: Isotropic layer fully programmable for lay-up angle.
	• While laying concentric fibre user can chose which walls to reinforce
	  ○ All walls
	  ○ Outer shell only
	  ○ Inner holes only
	• Scan Modes for different balances of speed and Resolution
	• Post Print feedback: scan data saved to USB for tracking the print part quality and in between dimension during print process

SOFTWARE DELIVERY	SaaS deployment and storage Local Storage Onsite Desktop version-Annual License
OTHER KEY FEATURES OF 3D PRINTER	• Pause / Resume Prints • Filament run out • MECHANICAL Chassis Anodized Aluminum Unibody • Build Platform Kinematically Coupled • Draft Blocking Enclosure • User Interface 4” Touchscreen • Built in camera to do online monitoring of print
PRINT QUALITY CONTROL	It should be possible to Define a tolerance specification

	in control software, our cloud based 3D printing software, and the Printer should scan the part while it's printing to ensure that it always meets the spec. If an error is detected user should be alerted and can choose to cancel the print remotely, saving time and material.
IN PROCESS INSPECTION	The quoted printer should be capable of quality and precision in 3D printing. It should Scan the parts mid-print using the laser displacement sensor affixed to the print head & must ensure dimensional accuracy at the most critical tolerances at any point in the 3D print.
Consumable material	Vendor should quote consumable material separately
Consumable spare part	Vendor should quote consumable spare part separately

Terms & Conditions of the quotations are as under :

1. The quotations should be submitted in the properly sealed envelop, addressed to the undersigned. The enquiry no. and date should invariably quoted on the top of the envelope.
2. The rate quoted should be inclusive of sales tax and other taxes including freight charges (if any).
3. The quotations shall remain valid for two months from the date of opening.
4. The Institute reserves the right of accepting or rejecting any quotations without assigning any reason thereof.

Your early response in this matter would be highly appreciated.

Sincerely,

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