Tender Title: TENDER FOR SUPPLY & INSTALLATION OF 3-D BioPrinter (Tender No.: IIITJ/TISC/2022-2023/13)

Corrigendum-1: **Date: 18.06.2022**

1. Changes in the Technical specifications are provided in the below table:

Annexure–I

TECHNICAL COMPLIANCE SHEET

S. No.	Technical Specifications 3-D BioPrinter	Technical Compliance (Yes/No)
1	**3D BioPrinter Qty (01):** 3D BioPrinter with following minimum specifications - There should be a provision to use different combination of print heads. - Each printhead should be of plug and play type. - Precision should be at least 1-micron on x, y, and z axes and should allow to print high resolution structures. - Should have a minimum number of 3 print heads (same or different kinds) to print multi-cell tissues easily and quickly with multi-bioinks. - ~~Each print head must have individual temperature control and must be able to cool to 4°C and heat to temperatures >150°C.~~ - Each print head must have individual temperature control and combination of print heads should be able to cover a temperature range from 4°C to 150°C or better. - ~~The extruders should be able to use disposable and commercial syringes of at least 5mL in volume, making it easy to load custom bioinks.~~ - The extruders should be able to use disposable and commercial syringes available in the market (atleast 3ml or 5 ml of volume) - Should be able to print wide range of bioinks including silk fibroin, collagen solutions, gelatin methacrylate, alginate, poloxamer, hyaluronic acid, polycaprolactone (PCL), novel synthesized polymers, new polymer blends and composites developed in-house. - Should be provided with compressed air pneumatic system or equivalent to drive deposition for unparalleled control. Pressure ranges should be between 0 and 100 psi to accommodate a wide range of viscous materials and it must be easily possible to select a desired pressure value in this range. - Minimum built volume should be 80 x 120 x 50 mm - Should have inbuilt photocuring with wavelength of UV Light (365 nm) and Blue Light (405 nm). The machine should offer the	

	flexibility of photocuring after printing each layer or photocuring of the entire part after complete printing is done. - Print-bed temperature should be controlled from at least 25°C to 60°C, allowing to maintain cells at 37°C and experiment with new bioinks. - It should be possible to 3D print into Petri Dish, 6, 12, 24, 48, 96 & 384 well Microplates, and Slides bought from various commercial suppliers. All these options should be able to be selected via a drop-down menu either in the computer software or by a touch screen on the machine. - Accepted Print Files should be STL, G-Code. It would be desirable to have acceptability towards other print file types such as *.obj as well. It must be possible to download the G-code file used for a particular print. - Should be able to be placed inside a laminar flow hood/biosafety cabinet. - An appropriate air-flow chamber equipped with germicidal light should be provided to house the instrument inside the chamber under aseptic conditions. Airflow type: - Horizontal Airflow from the front. o Prefilter is made from Non-Woven Synthetic with HDPE mesh and Al expanded mesh on air leaving side; conforms to EU – 4 / G-4 Grade, with the efficiency of down to 10 microns. o HEPA Filter should be water-resistant, fire retardant, and conforms to EU – 14 Grade, with an efficiency rating better than 99.999% for 0.3 µ. o Plug & play system designed to meet the requirements of US Federal Standard 209 B (BS 5295) providing particle-free air to meet class 100 conditions. International Standards - UK Complied Certifications – ISO 9001:2015, CE. GMP o Electricals fittings & Fixtures: - ▪ Microprocessor-baseded PID Controller – UV ON-OFF, UV-Timer, ▪ Blower 3 speed control – High, Low, Medium, and Display of UV Age. ▪ Fluorescent light – 20 watt, >800 lux, with chokes for lighting ▪ UV Light – 15 watt, Philips make ▪ Power supply -220-230 V, 50-60 Hz, 5/15 amps power cord. - Should have an autocalibration feature - 3 years warranty on all parts. - Connectivity should be via Wi-Fi, Ethernet or pen drive. - Should be compatible with Windows, MAC and Linux Operating Systems - Power requirements: 24V DC@ 6-8 amps; AC input 100-240V, ~2 Amps, 50-60Hz; Operating voltage of 230V, 60Hz. - Should be provided with operating and service manual - Syringe tips required.	

	~~o Metal tips for metal syringes of at least two different sizes (10 each)~~ o Metal tips for metal syringe of at least two different sizes (10 each) or appropriate cartridge & nozzles for high temperature printing. o Plastic tips boxes of at least three different sizes (50 each) o Some size examples are 23-gauge, 27 gauge and 32 gauge. Equivalent acceptable. - The printer should be capable of printing 2-3 different polymer co-axially. Arrangement should be provided for this purpose if needed. - 3-D BioPrinter compatible data acquisition, data visualization and data storage system should be provided. The system should have Windows 10/11, Intel (R) Core™ i5/i7 processor, ≥500GB HDD, ≥8GB RAM, ≥26" LCD monitor or more, and other necessary features to ensure smooth operation of the system. - Software support for 02 years for at least 05 user licenses. - Training support (minimum 04 sessions offline for 2-3 days during 01st year and 04 online sessions yearly during warranty period along with regular technical support). - Software support for converting CT scan & MRI data to printable files. - Stabilizer suitable and protect the instrument from power fluctuations.	

2. Revised Due date for bid submission: 27.06.2022, 3:00 PM

3. All other terms and conditions of the original tender document remains the same.