

Purchase of 3D bioprinter

The Indian Institute of Science (IISc), Bangalore, seeks the supply and installation of a state-of-the-art 3D printer for its research activities specially for biomedical applications. However, it is highly desirable that the printer be highly versatile to cater to the needs of the wide institute research community and can be used for a variety of materials research not limited to biomaterials alone. It is desired that the printer will offer the following functionality and performance:

- * Should be a computer-aided scaffold construction system with full control of printing process through a user-friendly software interface.
- * Should allow printing of a variety of thermoplastic polymers as well as soft materials including different kinds of hydrogels and cell-laden polymer suspensions; Should allow processing of thermoplastic polymers from powders or granules as well as photopolymerizable polymers.
- * Should allow printing onto standard petri dishes or other substrates commonly used for cell culture.
- * Should allow for printing of materials over a wide range of temperature (between 0°C and 200°C or higher); Allow the control of the temperature of the printing platform over a wide range (between 0°C and 50°C or higher).
- * Should have the provision for parking at least 5 different dispensing printer heads.
- * Should allow printing of an object with different materials from different heads interchangeably.
- * Printer heads should be amenable for sterilization for printing of cells.
- * Printing platform must be fixed to minimize vibrations to printed parts
- * Should be an upgradable system for use with additional printing head types as needed in the future.
- * Should exhibit movement accuracy of +/-5 micrometers or better
- * Large printed volume of the object is highly desirable (at least 140 mm x 140 mm x 140 mm)
- * Ability to print ceramic powder slurry is desired
- * Desirable to have feature sizes down to 100 micrometers.
- * Desirable to have provision for real-time monitoring of object fabrication.

The quoted price should include charges for packaging and shipping to Bangalore as well as warranty for 5 years. Basic consumables for the use of the printer should be included in the quote.

Evidence of prior installation of the model quoted (or equivalent models) in other institutions and organizations of repute in India is highly desired and should be furnished along with the quote.

A technical compliance certificate should be included. The above specifications are highly desired. However, in the eventuality of budget constraint, the institute reserves the right to compromise on some of the desired specifications of the printer, as listed above.

The sealed quotation must be submitted in two individually sealed parts, one each for the technical documentation and financial quote. The quote must be submitted latest by October 22nd, 2019 to the Chairman, Department of Materials Engineering, Indian Institute of Science, C.V. Raman Avenue, Bangalore- 560012.