RFQ for a 3D Bioprinter (Stereolithography)

This is a Request for Quote (RFQ) from domestic (India-based) manufacturers by the Indian Institute of Science (IISc), Bangalore, for the supply and installation of a state-of-the-art 3D bioprinter based on stereolithography 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 3D printing system with full control of the printing process through a user-friendly software interface
- Should allow printing of a variety of photosensitive materials such as hydrogels, polymers, and additive-laden polymeric suspensions
- Should be capable of printing 3D constructs (several centimeters in size) at a resolution of 1-3 micrometers at a speed of at least 15mm/min
- Should be capable of precision removal of materials within printed materials without any limits on penetration depth at a resolution of 1-3 micrometers
- Should be able to combine automated use of both additive and subtractive modes of fabrication to print single 3D constructs.
- Should allow printing on commonly used substrates for cell culture.
- Allow temperature control during the printing process (between 25°C to 50°C or higher).
- Should be capable of multi-material printing with at least 3 materials.
- Printing platform must be fixed to minimize vibrations to printed parts
- Should exhibit movement accuracy of +/-2 micrometers or better
- Should be capable of performing two-photon imaging and manipulation.
- Desirable to have real-time monitoring during fabrication
- Desirable to have fluorescence imaging integrated with the printing platform.
- Should be compatible with nonlinear imaging platforms as needed in the future
- Should be compatible with a wide range of wavelengths as needed in the future

Procedure:

1. Please submit the proposal to this address: The Chairman, Dept. of Materials Engineering, Indian Institute of Science, C.V. Raman Avenue, Bangalore 560012
2. The deadline for submission of proposals is Friday, 12th of February 2021, by 5 pm.
3. The technical and financial details of the proposal should be provided in individually sealed envelopes.
4. The technical proposal should contain a compliance table beside the technical specifications listed in the description section below.

5. The compliance table should include all the items and in the same order. The first column should describe your compliance in a “Yes” or “No” response. If “No”, the second column should state the extent of the deviation. The “third” column should state the reasons for the deviation, if any. The fourth column can be used to compare your solution with that of your competitors or provide details as requested in the technical requirements table below.