

**Foundation for Innovation and Technology Transfer  
(FITT)**

**Notice Inviting Quotation**

<b>Details of the item</b>	<b>Ramina Process Analyzer with Bioreactor BallProbe &amp; Accessories</b>
<b>Reference No.</b>	<b>FT/2022/03/51</b>
<b>NIQ start date</b>	<b>21-06-2024</b>
<b>NIQ closing date</b>	<b>11-07-2024</b>

**Ramina Process Analyzer with Bioreactor BallProbe & Accessories**

**TECHNICAL SPECIFICATION**

<b>S No.</b>	<b>Attribute</b>	<b>Specifications</b>
1.	Spectral Range	100 to 3250 cm <sup>-1</sup> or wider
2.	Laser Excitation Wavelength	785 nm (+/-0.5 nm, 2 cm <sup>-1</sup> line width, stability <0.1 cm <sup>-1</sup> )
3	Laser output power	10 to 450 mW (adjustable)
	Laser exposure time/ integration time	10 ms to 60 second or better (adjustable)
4	Detector	Thermally stabilized CCD or better
5	Laser Type	3B (FDA compliant)
6	Resolution	6.5 cm <sup>-1</sup> or better average across spectral range
7	RMS dark noise	≤16.5 counts at 10 sec. integration
8	System warm up	System should not require any warm-up time
9	Probes	<p><b>Probe 1:</b> Bioreactor probe with Pg 13.5 Fitting should</p> <ul style="list-style-type: none"> <li>a. withstand temperature (or -20 to 150 °C or wider</li> <li>b. withstand pressure: 400 bar or more</li> <li>c. Length 300 - 320 mm (adjustable adapter should be provided to fit in smaller bioreactors upto 1 L )</li> </ul> <p><b>Probe 2:</b> Flowcell sampling probe</p> <ul style="list-style-type: none"> <li>a. Suitable for temperature -20 to 250°C</li> <li>b. Withstand pressure upto 2500 psi</li> <li>c. Flow path should be upto 200 ul</li> </ul>

		d. Plumbing connection should be compatible with 1/8 in. tube fitting connectors
		<b>Probe 3:</b> Small diameter laboratory probe for micro-volume samples a. With ¼ inch or smaller diameter b. Length ~220 mm c. Withstand to temperature -20-150 °C or wider d. Withstand to pressure 400 bar or more
10	Safety requirements of system	a. Removable laser control key should be present. b. Removable laser interlock switch Probe interlock for
11	Accessories	a. Probe head suitable for easy switching between probes should have at least 2 m fibre optic cable b. Cuvette holder for offline analysis of samples c. Performance verification standard (e.g. traceable polystyrene or Cyclohexane ) d. SERS(Surface Enhanced Raman Spectroscopy) kit & others
12	Software	a. Operating/ spectral acquisition software for permanent with no expiry should be included. b. Chemometric method development software(Eigenvector Solo is preferred) with no expiry should be included
13	Weight of system	Less than 10 kg for easy portability across lab(s)
14	Operating system	System should be based on Windows 10 OS or later
15	Computer	Desktop with i7 8 <sup>th</sup> gen 16 GB RAM and 1TB latest should be included
16	Electrical	a. Input voltage: 90-264 VAC 50-60Hz b. Operating Voltage: 12 VDC, 2A
17	Carry Case	Should include rugged Pelican carry case for transportation
18	Video Output	System should be provided with computer and monitor. Suitable monitor such as VGA/HDMI connectivity should be available.
19	Should include	Wireless mouse, HDMI cables, monitor, computer system for operation and other peripherals for operation should be included
20	Warranty and Maintenance	At least 1 year warranty + AMC of 2 years should be included

## **Terms & Conditions Details**

**Preparation of Bids:** The offer/bid should be submitted in two bid systems (i.e.) Technical bid and financial bid. The technical bid should consist of all technical details along with commercial terms and conditions. Financial bid should indicate item wise price for the items mentioned in the technical bid

**Opening of the tender:** The bid will be opened by a committee duly constituted for this purpose. Only one representative will be allowed to participate in the tender opening. The technical bid will be opened first and it will be examined by a technical committee (as per specification and requirement). The financial offer/bid will be opened only for the offer/bid which technically meets all requirements as per the specification, and will be opened in the presence of the vendor's representatives subsequently for further evaluation. The bidders if interested may participate on the tender opening Date and Time. The bidder should produce authorization letter from their company to participate in the tender opening.

**Acceptance/ Rejection of bids:** The Committee reserves the right to reject any or all offers without assigning any reason.

The quote should reach the following address on or before –

**Anurag S.Rathore, Ph.D.**  
**Professor, Department of Chemical Engineering**  
**Coordinator, DBT Center of Excellence for Biopharmaceutical Technology**  
**Indian Institute of Technology, Delhi**  
**Hauz Khas, New Delhi, 110016, India**

Please quote prices for FOB New Delhi, inclusive of all taxes and duties.

Quote should be in Indian Rupees for agents of Indian manufacturers, or in foreign currency, for agents of foreign manufacturers, and needs to be valid for at least three months.

Attach all the technical literature and a list of similar installations done in India.

If the quote is being submitted by a representative of the manufacturer, a valid agency-ship or dealership certificate authorizing the agent to quote to IIT Delhi on behalf of the manufacturers should be enclosed. The principal and the vendor, both, are not allowed to quote for the same product.

Complete set of manuals for the operation of the equipment should be given.

Please specify all of your terms and conditions clearly, including delivery period.

Mode of payment for purchases in foreign currency are through irrevocable letter of credit, or through wire transfer on delivery. Only bank charges within India are payable by FITT, IIT Delhi, all bank charges outside India are the responsibility of the seller. For purchases in INR, payment is on delivery.