

Indian Institute of Technology Kanpur

Physics Department

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Revised Tender Document : Closing date changed to January 15, 2015

ENQ No. PHY/RG/2014-15/01

Date: December 15, 2014

Sealed quotations (separate technical bid and price bid) along with proprietary certificate and authorization letter/certificate are invited as per the specifications given below for the following items from authorized suppliers:

Name of Equipment: Micro Raman system with imaging and ultra-low frequency capabilities as per specifications mentioned below.

(a) Minimum technical specifications:

1.	Spectrograph	UV-VIS-NIR (200 nm - 2000 nm), with at least 600 mm focal length spectrograph, including high throughput achromatic coupling optics optimized to work from UV to NIR with maximum efficiency with resolution better than $> 1 \text{ cm}^{-1}$
2.	Detector	Open Electrode CCD air-cooled to -60°C with Q.E $> 40\%$
3.	Gratings	At least two diffraction gratings
4.	Microscope	Upright microscope with at least two objectives – 10x and 100x. The microscope should have the ability to move the objective to focus on the sample instead of the sample moving. XY motorised stage, X = 50 mm - Y = 50 mm, micrometric motorised Z device controlled by software.- XY specifications : minimum step size = 10 nm ; repeatability = 1 μm ; resolution : 100 nm Z specifications : resolution (minimum step size) = 0.01 micron. Also positioning joystick, an external controller, software package and Raman autofocus capability.
5.	Coupling Optics	Direct coupled optics. No optical fiber based delivery or collection of light signal.
6.	Laser	532 nm laser kit including air cooled frequency doubled Nd:Yag laser, narrow bandwidth (532 nm / 50 mW / 1 MHz) with necessary coupling optics for spectrograph and platform if required.
7.	Software	For control of instrument and data analysis. Compatible with Windows 7 or later preferably 8.1 (64bit)
8.	Filters(bandpass and notch)	Ultra Low Frequency filter set for 532 nm wavelength, including a set of specific bandpass and Notch filters for measurements down to at least 10 cm^{-1}

9.	Repeatability	0.05 cm ⁻¹ or better
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(b) Additional items

10.	Piezo mapping stage	Piezo XY mapping Stage 130x130µm: High accuracy computer controlled motorized XY mapping stage. Travel Range 130x130µm, minimum step size of 5nm.
11.	Laser kit -785 nm	785 nm laser kit including air cooled intra cavity regulated laser diode with point source for maximal confocal performance (785 nm/ 100 mW), Edge and bandpass filters set at 785 nm for measurements from 50 cm ⁻¹ , motorized optics for commuting fully controlled by software supplied with necessary coupling optics to spectrograph.
12.	Laser kit -633 nm	HeNe laser kit 633nm/17 mW, including the Helium Neon laser mounted, the Edge and bandpass filters set at 633 nm for measurements from 50 cm ⁻¹ and the motorized switching system to allow the laser commutation fully controlled by software
13.	Low frequency filter kit - 633 nm	Ultra Low Frequency kit for 633 nm, including a set of specific bandpass and Notch filters for measurements down to 10 cm ⁻¹
14.	Low frequency filter kit - 785 nm	Ultra Low Frequency kit for 785 nm, including a set of specific bandpass and Notch filters for measurements down to 10 cm ⁻¹
15.	Low temperature Stage	Full kit for Micro thermometric cell working from -196°C to 600°C controlled by software, with the following specifications: <input type="checkbox"/> - Sample area : 22 mm diameter and 1mm height - Light aperture : 2mm, with 16mm X.Y sample manipulation <input type="checkbox"/> - Stage body size - 137 x 92 x 22 mm <input type="checkbox"/> - Gas tight chamber for atmospheric control <input type="checkbox"/> - Water cooled stage body for high temperature measurements <input type="checkbox"/> - LN2 cooling device for low temperature measurements
16.	High temperature Stage	Full kit for Micro thermometric cell working from ambient temperature up to 1500 °C controlled by software, with the following specifications: <input type="checkbox"/> - Sample crucible/cup size : 8mm diameter by 3 or 6 mm deep - Stage body size - 104 x 95 x 29 mm - Suitable for transmitted and reflective light - Gas tight chamber for atmospheric control - Water cooling connections for stage lid and body
17.	Power Meter	Powermeter working from 400 nm to 1.1 micron including density filter

18.	software	Additional 4 licenses for the data acquisition software for data processing and advanced data analysis. Must include dongle etc. if required.
19.	Macro horizontal access	UV-Vis-NIR macro lens of 40 mm focal length on an horizontal exit equipped with a 10mm x 10mm cell holder for UV-Vis-NIR range, provided with a spherical back mirror to get a multipass effect.
20.	Polarization kit	A set of visible half wave plate for 90° rotation of the incoming laser polarisation and a Vis analyser to analyse the Raman signal for the range [400-700nm] and holders
21.	Long working distance objective	50X LWD visible objective, NA = 0.50 WD = 10.6 mm
22.	NIR objective	50X NIR objective, NA = 0.80, WD = 0.5 mm (longer parfocality 54mm)
23.	UV-NIR objective	74X fully achromatic reflective objective (cassegrain) NA=0.65, WD=1mm spectral range [200-2100nm]

Terms and conditions:

- Technical and financial details should be in separate envelope.
- Maximum educational discounts should be applied
- Quote must include price on Ex-works, FOB basis & CIF pricing upto Kanpur.
- Institute is exempted for payment of Excise Duty under notification No. 10/97.
- Warranty minimum 2 years on the system. The Warranty must start from the date of installation at IITK. If any component has reduced warranty then please specify.
- Quotation should carry proper certifications like agency certificate, proprietary certificate etc.
- The delivery timeline should be specifically stated.
- Provided the technical bid meets the minimum specification, the final decision in favor of a bid will be made based on the financial bid, price quoted for the optional items, favorable payment terms, prior sales and service record and after-sales services offered, and delivery time.
- The Warranty must start from the date of installation at IITK.
- Initial installation, demonstration, and training-session for 2-3 days at IIT Kanpur will have to be provided by the manufacturer or the vendor for the quoted Raman system. Another training session may need to be held later during the first year of installation.
- Specify response/turnaround time in case of breakdown of instrument during warranty.
- The indenter reserves the right to withhold placement of final order. The right to reject all or any of the quotations and to split up the requirements or relax any or all of the above conditions without assigning any reason.

Please send your quotations valid for at least 60 days with detailed specifications on or before January 15, 2015 to the following address:

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(Rajeev Gupta)