

DEPARTMENT OF CHEMISTRY  
INDIAN INSTITUTE OF TECHNOLOGY - DELHI  
HAUZ KHAS, NEW DELHI - 110016

**TENDER FOR NOTICE INVITING QUOTATION (NIQ)**

**Sub: Confocal Raman Microscope**

Sealed quotations in separate envelopes of technical and commercial bid kept in **a one sealed outer envelop** are invited for purchase of a Confocal Raman Microscope as per specifications given below. Your sealed quotation should reach latest by 5 PM on **24.08.12** to **Prof. A. K. Ganguli, Department of Chemistry, Indian Institute of Technology – Delhi (IIT Delhi), Hauz Khas, New Delhi - 110016**. Your quotation should be superscribed “Quotation for **Confocal Raman Microscope** due on **24.08.12**

**Minimum Specification: Confocal Raman Microscope**

**A Full Automated Confocal Laser Raman system including a confocal microscope, transfer and filtering optics, an achromatic spectrograph equipped with gratings, multichannel detector, laser and the relevant software and computer platforms.**

**1. Raman spectrometer module:**

- Spectral range: Allows recording the full Raman range with high resolution
- Spectral Resolution:  $\leq 2.5 \text{ cm}^{-1}$  at 532 nm and  $\leq 1.1 \text{ cm}^{-1}$  at 785 nm
- Spatial Resolution: True confocal microscope system and smaller than 1micron lateral resolution
- High throughput Integrated Spectrograph and four gratings (two gratings with  $\geq 600$ grooves/mm and other two  $\geq 1800$ grooves/mm) with scanning mechanism
- A filter wheel with neutral density filters controlled by software for incident laser intensity attenuation
- Interface: USB and/or RS-232/IEEE-488
- Power supply: 220-230 VAC, single phase

## **2. Confocal Microscope (Upright)**

An internal white light illuminator by transmission supplied with an Abbe condenser

A revolver equipped with 2 plan-achromatic objective-lenses: 10x (NA = 0.25, WD = 10.6 mm), 100x (NA = 0.9, WD = 0.21 mm), objective lens (air) with manual XY stage

Software controlled confocal pinhole

Provision to add additional Objectives in the future

## **3. Confocal coupling optics between the microscope and the spectrometer:**

Confocal microscope with user selectable aperture (50, 100, 300 and 500 Microns)

Video camera displays laser spot image by the software.

USB colour camera:  $\geq 1$  Mega pixel (high definition)

Binoculars

## **4. CCD detector:**

Active Pixels (horiz x vert): 1650 x 200

Pixel Size:  $\leq 16\text{mm} \times 16\text{mm}$

Image Area: 26.6 x 3.2(mm)

Optimized for VIS-NIR detection and QE 60% @ 750nm.

Read Noise (e-):  $\leq 5$  @ 35 kHz

Dark current (e- /pixel/sec):  $\leq 0.1$  @  $-50^\circ\text{C}$

## **5. Lasers and Filters:**

Diode laser 532nm, power at 25mW with appropriate Raman (notch) filter for measurements above  $70\text{cm}^{-1}$

Diode Laser 785 nm, power at 90mW air cooled, with Edge and Interference filters set at 785 nm for measurements from  $150\text{cm}^{-1}$ .

## **6. Computer and software:**

- Software should be compatible with Windows and should be supplied with at least two computer dongles permitting the control of the instrument, data acquisition, and data manipulation including Raman and photoluminescence mapping and storage option.

The software should have advanced chemo-metric and Macro Programming capabilities and the Software should have Auto validation and auto calibration.

- Offline Software should be supplied for data viewing and data manipulation
- Computer/s with latest configuration with windows, along with TFT monitor for operating the instrument and data analysis.

### **Terms and conditions:**

1. Please submit the TECHNICAL and FINANCIAL bids in separate sealed envelopes. Mark the two envelopes clearly as “Technical Bid” and “Financial Bid”. Both the sealed envelopes should be sent in a single sealed envelope, clearly marked as “**Quotations for Purchase of Confocal Raman Microscope** due on 24-08-12”. The quote should reach the following address on or before 24-08-12, upto 5 PM.

Prof. A. K. Ganguli  
Department of Chemistry  
Indian Institute of Technology Delhi  
Hauz Khas, New Delhi-110016

2. Please quote prices at FOB New Delhi, inclusive of installation charges. CIP charges should be quoted separately.
3. The quotations should be in the currency of the country of origin as well as Indian Rupees wherever possible and should be valid for at least three months.
4. Please attach all the technical literature and a list of similar installations done in India.
5. Standard warranty details (minimum 3 years) should be provided.
6. Payment should be through irrevocable letter of credit.
7. If the quote is being submitted by the representative of the Principals/manufacture themselves, a valid Agency ship/Dealership Certificate authorizing the agent to quote to IIT Delhi on behalf of the Principals should be enclosed.
8. Complete set of manuals for the operation of equipment should be given.
9. Clearly specify the installation requirements—such as space, power, frequency, environment (Temperature and humidity) etc.

10. If the items quoted are proprietary in nature, please enclose proprietary certificate from the principals stating "certified that \_\_\_\_\_ is a proprietary item M/s. \_\_\_\_\_ and no other manufacturer makes these items.
11. If the bidder is an Indian agent, the agency certificate should be enclosed.
12. Please produce compliance certificate for the specification.
13. Training should be provided free of cost at site.
14. Delivery period should be specifically mentioned and should be as small as possible.
15. The products will be used for educational purposes. Hence any applicable institutional discounts should be offered and stated.
16. SALES TAX: This Institute is not exempted from the payment of Sales Tax/Service Tax/VAT. The rate (i.e. percentage of Sales Tax should be clearly indicated included or excluded) wherever chargeable.
17. Institute reserves the right to accept or reject any or all the quotations without assigning reasons thereof.