

Tender Notification for the Procurement of High Resolution Confocal micro Raman Spectrometer

Dear Sir,

Kindly send a quote for the following item on CIP Bangalore basis. Your quotation should clearly indicate the terms of delivery, delivery schedule, E.D., payment terms etc. The tender should be submitted in two separate sealed envelopes - one containing the technical bid and the other containing the commercial bid, both of which should reach us, duly signed on or before 1700 hours, 24 NOV 2017.

Please enclose a compliance certificate for all the items including Raman Spectrometer (including gratings, filters, power levels), lasers, microscope and collection accessories, detector, computer hardware and software etc. along with the technical bid. Technical details and other terms and conditions mentioned below.

Sincerely,

Chinmoy Ranjan
Department of Inorganic and Physical Chemistry
IISc Bangalore

Two sets of (technical + commercial) sealed bids should be addressed to: The Chairman, Department of Inorganic and Physical Chemistry, Indian Institute of Science (IISc) Bengaluru, India – 560012.

Technical Details:

A direct coupled (no fiber coupling) computer controlled confocal Raman spectrometer with the capabilities of recording Raman. Spectrometer should be inclusive of research grade microscope with objectives, detector, lasers, optics and other necessary accessories, along with computers & software for data acquisition and data analysis. The machine should be capable of performing Raman measurements with a spectral resolution (FWHM) better than 0.5 cm^{-1} . The system should be ready for future use with UV Laser system. The delivered machine should be fully functional, well calibrated and ready to use upon installation.

Raman Spectrometer:

Spectrograph equipped with research grade microscope capable of producing Raman Spectra in the range of 100 cm^{-1} to 4000 cm^{-1} (or better).

Spectral Range: 200 nm – 2100 nm (or better)

Spectral resolution (FWHM): 0.5 cm^{-1} (or better)

Spatial resolution: 1 micron (or better) lateral, and 2 micron (or better) axial

Scan to Scan repeatability 0.1 cm^{-1} or better

Should allow space for installation of a third UV laser in future.

Gratings: Must have two gratings (1800 gr/mm or higher) and (1200 gr/mm or higher). The grating must be optimized to work with UV-VIS-NIR Lasers and provide high resolution. The

grating must be controlled through software. Change of gratings if required must be quick and not require realignments.

The spectrograph should allow spectral coverage from 100 cm^{-1} to 4000 cm^{-1} in single continuous acquisition.

Raman Filters – 100 cm^{-1} or lower for 532nm and 785nm

Laser Power: The spectrometer must have a filtering system that can offer choice of at least 12 or more levels of power (from levels from 0.00005% to 100%) and it must be software controlled.

Calibration Source: The system must be supplied with calibration sources (such as Silicon and Neon) for wavelength and intensity calibration.

Lasers: All the lasers should be air cooled for maximal performance and should be directly coupled to the spectrometer. Lasers switching should be software controlled. Laser alignment should be software controlled. Lasers should be directly coupled with no fiber coupling.

- Air Cooled Diode Laser 532nm, 50mW or greater
- Air Cooled Diode Laser 785nm, 300mW or greater
- Should have space for a 3rd laser (UV)

Microscope:

A high stability research grade microscope. Microscope should be branded, research grade with colour camera for viewing. Microscope should be directly coupled to the spectrometer.

Objectives: 10x, 20x, 100x
and 50x Long Working Distance objective (with working distance of 8mm or greater)
and 50x Super or Ultra Long Working Distance objective (with working distance 18mm or greater)

Removable XY Stage

Secondary Raman collection device (such as an extendable and steerable arm functional for both 532 and 795 nm) that can carry out micro Raman measurements in various collection geometries (including top down, side-ways and bottom up). For this device, the collection of light at the sample must happen through an objective lens. A direct optically coupled solution is preferred.

Detector(s)

A high efficiency, multichannel, CCD detector(s) ready for UV-VIS-NIR Raman measurements. It must have fully automated operation for providing maximal performance.

Cooled to at least -60°C (Peltier Cooling preferred)
Spectral range: 200 to 1000nm (or better)
Detector Size: 1024-pixel x 256 pixel

Computer and software

The state-of-the-art computer control system compatible-with and optimized for the application software to perform the various measurement options automatically. (language of software: ENGLISH)

Minimum specs: The branded computer that has optimum performance (atleast dual core processor, 4GB RAM, 250 GB HDD or SDD), 24” LCD display and runs on windows. The computer preferably should be a branded computer that can be serviced by locally.

Software license for (atleast 2) additional offline work stations for offline data processing.

Optional items:

- (1) Notch filter to carry out antistokes Raman
- (2) Lower cut-off filter (50 cm^{-1} or lower)

Other Terms and conditions:

1. Installation and Training must be included.
2. The vendor should have a track record of having previously supplied atleast 10 similar equipment in India (please furnish details).
3. The vendor should have qualified technical service personnel for servicing the equipment.
4. The payment will be through confirmed irrevocable Letter of Credit.
5. The lead time for the delivery of the equipment should not be more than 10 weeks from the date of receipt of our purchase order.
6. The instrument must carry a comprehensive warranty of 3 years (for all the parts excluding, Lasers which must have at least 1year warranty) from the date of installation.
7. Validity to be three months minimum.
8. Mode of shipment – air freight to be mentioned.