

Enquiry No. IITK/CHM/MC/13-14/30  
Due date: 21/10/2013

**Subject:** Purchase of one high sensitivity imaging spectrometer

Please send us sealed quotations for the following item. Please mention tender notice number on top of envelop. Within this sealed envelope, **please put technical and financial bids separately in two sealed envelopes**. A single company/ distributor should quote for all the items. Partial quotations are not allowed.

**ITEM:**        **High sensitivity Imaging Spectrometer.** The required quantity is 1 (one). The spectrometer should contain **(i)** a high throughput imaging spectrograph, **(ii)** a highly sensitive EMCCD camera, and **(iii)** software for camera (and spectrograph) control, imaging as well as spectral acquisition, visualization, and analysis. Shown below are the desired specifications for each individual components of the spectrometer

#### **Desired specifications of the spectrograph**

focal length ; 303mm  
aperture : f/4 (faster), triple grating turret  
linear dispersion : 1.78nm/mm to 2.58nm/mm for 1200l/mm grating (depends on wavelength range)  
scan range : 0 nm to 11300 nm  
CCD resolution : maximum 0.04nm (depends on grating and CCD selected)  
Wavelength coverage : maximum of 67nm with 1200l/mm grating  
focal plane : 27mm x14mm  
input slit : 10um to 2.5mm  
CCD port  
Wavelength accuracy : 0.04nm  
repeatability : 4pm  
step size : 0.004nm  
interface : USB  
Accessories required for imaging should be included

#### **Desired specifications of the EMCCD**

format : 512 x 512  
pixel size : 16um x 16um  
Full Frame rate : 56 fps (essential specification)  
Active area pixel well depth : 160000 e-1  
Gain register pixel well depth : 800,000 e-1  
Maximum cooling : down to -100C (essential specification)

Image area : 8.2mm x 8.2mm, with 100% fill factor  
dark current at -85C e-1/pixel/sec : <0.001 e-1/pix/sec  
Maximum pixel readout : 17MHz  
Readout : through both EMCCD and conventional amplifiers (essential specification)  
Option of readout through conventional amplifier with <3 e-1 read noise  
Back illuminated with fringe suppression  
Calibration of EMCCD gain on the field without requiring light source  
Computer interface : USB as well as Camlink

### **Desired specifications of the software for camera control and data acquisition**

Full spectrograph and camera control within the same package  
Flexible data display: Should be able to view data in 2D, 3D, stacked and overlaid  
Data export options: SIF, GRAMS, ASCII XY, FITS  
Easy automation of experiment with additional commands added to the basic programming language: Essential  
User defined background and data colours : Essential  
"Step and glue" option for acquiring spectra over a large wavelength range : Essential

### **Terms and conditions:**

1. Maximum educational discounts should be applied – these equipments will be used for research purposes only.
2. The quotation should have a validity of minimum 60 days.
3. The delivery period should be specifically stated.
4. The quoted spectrometer should be from reputed international companies (e.g., Horiba-JobinYvon, Princeton Instruments, Andor, Hamamatsu, etc.). The spectrometer maker must have supplied the quoted spectrometer (or the individual components of the spectrometers) to at least 20 leading universities/research institutes in the USA/Europe/Japan in last 3 years.
5. The Indian Representative should have at least 3 years association with the Principal company. It is also required that the Indian representative have supplied the quoted spectrometer (or the individual components of the spectrometers) to at least 10 research labs in IITs/IISc/IISERs in last 3 years (Please provide documents).
6. Warranty period should be mentioned and whether after-sale services are available in

India or not. **A minimum of 3 years of warranty is required.** Also, The vendor must be able to provide technical support throughout the warranty period and beyond.

7. Quotes should be made options for the following delivery modes

- I. FOB in country of origin
- II. CIF, Kanpur
- III. CIF, New Delhi

8. Quotation should carry proper certifications like authorization certificate, proprietary certificate, etc. (if applicable).

9. Please mention tender notice number on top of envelop.

Please send your best offer on or before 21/10/2013 to the address given below.

**Mail the quotation to:**

Manabendra Chandra  
Assistant Professor  
Department of Chemistry  
Indian Institute of Technology, Kanpur.