NOTICE INVITING QUOTATIONS

Sub: Purchase of Steady-State Fluorescence Spectrometer

Sealed quotations in separate envelopes of technical and commercial bid kept in a one sealed outer envelope are invited for purchase of a Steady-State Fluorescence Spectrometer as per specifications given below. Your sealed quotation should reach latest by 5 PM on 27th March 2012 to Dr Pramit K Chowdhury, Department of Chemistry, Indian Institute of Technology – Delhi (IIT Delhi), Hauz Khas, New Delhi - 110016. Your quotation should be superscribed “Purchase of Steady-state fluorescence spectrometer due on 27th March 2012”.

SPECIFICATIONS

1. The fluorescence spectrometer should be a modular system capable of acquiring steady state excitation and emission spectra in the UV-visible spectral range with single photon counting sensitivity.

2. **Excitation Source**: Xenon Lamp (steady state) of power greater than 400W (ozone free) and its power supply in air-cooled housing; should be having appropriate focusing optics.

3. **Monochromators**: Spectrometer should be equipped with monochromators of Czerny Turner configuration both on the excitation and emission side with the following specifications:

   **Excitation Monochromator**: (i) Single monochromator with ≥ 300 mm focal length
   (ii) Three-grating turret (computer controlled)
   (iii) At least 1200 grooves/mm for gratings
   (iv) Blazed in the UV region at ~ 300 nm
   (v) Spectral Bandpass : 0.1 – 12 nm (continuous and computer controlled)
   (vi) Automatic calibration on start-up
   (vii) Speed: 150 nm/s or higher
   (viii) Multiple slits (computer controlled)
   (ix) Computer controlled shutter
   (x) Stray Light suppression: greater than 1 x 10^-4 (based on 1200 g/mm)

   **Emission Monochromator**: (i) Single monochromator with ≥ 300 mm focal length
   (ii) Three-grating turret (computer controlled)
   (iii) At least 1200 grooves/mm for gratings
   (iv) Blazed at ~ 500 nm
4. **Sample Chamber:**
   (i) Lens focussing optics as standard with mirror optics
   (ii) Single cuvette holder; holder should be temperature controlled with Peltier based cooling; range of control required: -5 °C to 100 °C; Peltier unit should be controlled automatically through the software
   (iii) Should be equipped with magnetic stirring facility
   (iv) Can be upgraded to an automated thermostatted multi-cuvette sample holder
   (v) Should be able to mount polarisers on the excitation and emission sides
   (vi) Should be able to mount appropriate filters on the excitation and emission sides

5. **Detectors:**
   (i) Red-sensitive photomultiplier R928P
   (ii) Spectral Range: 240 – 850 nm
   (iii) Should be preferably thermoelectrically cooled to minimise dark current

6. **Polarisers:**
   (i) Spectrometer should be equipped with Glan Thompson Polarisers both on the excitation and emission sides.
   (ii) The polarisers should be computer controlled.
   (iii) The polarisers should be easy to move into and out of the excitation and emission paths
   (iv) Automated anisotropy measurements and G-factor correction

7. **Front Face Sample Holder:** Instrument should be equipped with a standard front-face sample holder as an accessory; should be able to acquire spectra of powders, thin films, microscope slides and pellets.

8. **Signal-to-Noise:** greater than 5000:1 based on 5 nm slits and excitation at ~350 nm (excitation for water Raman signal)

9. **Microwell-Plate Reader:**
   (i) Should be included in the quotation as an external module
   (ii) Can be easily coupled to the spectrometer through fiber-optics
(iii) Designed for reading at least 96 plates and preferably upto 384 plates
(iv) Controlled by software
(v) Custom selection of microwells on the plate should be possible through the software

10. **Titration Assembly:**
(i) Auto-titrator assembly as an external module should be included
(ii) Dual-syringe autotitrator system
(iii) Stepper-motor driven
(iv) Usable Syringe volumes 10 μL to 50 mL
(v) Required syringes : 10 μL, 100 μL, 1 mL

11. **Optical Filter Set:** Long-pass (block light for all wavelengths below the cut off wavelength and transmit above the cut-off wavelength) filters with the following cut-off wavelengths should be provided as accessory : 280 nm, 320 nm, 340 nm, 375 nm, 395 nm, 420 nm, 455 nm, 495 nm, 515 nm, 530 nm, 550 nm, 590 nm, 610 nm, 630 nm, 665 nm; Filters should be easily mountable in proper holders in the emission and excitation arms

12. **Software:**
(i) Should be able to do complete data acquisition and analysis
(ii) Windows based
(iii) Complete control of all hardware components
(iv) Fully automated acquisition of anisotropy with G-Factor correction (if polarisers fitted)
(v) Should be able to carry out automated spectral correction

13. **Computer Hardware:** Dedicated computer system with all plug-in facilities

14. **Reference Photodiode:** The spectrometer should be equipped with a reference photodiode to monitor excitation lamp intensity fluctuations

15. **Electronics:** The spectrometer should be equipped with proper data acquisition electronics

16. **Cuvettes:**
(i) 2 quartz microfluorescence cuvettes (screw cap); maximum volume range 500-700 μl
(ii) 12 standard fluorescence quartz cuvettes (6 with cover and 6 with screw-cap) of 10 mm x 10 mm dimensions

17. **Upgradability:** The instrument can be upgraded to a time-resolved photoluminescence set-up capable of acquiring both fluorescence and phosphorescence lifetimes.
Terms & 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, with clearly marked as “Quotations for Steady-State Fluorescence Spectrometer due on 27th March, 2012”. The quote should reach the following address on or before 27th March, 2012, by 5 PM.

   Dr. P. K. Chowdhury  
   Department of Chemistry  
   Indian Institute of Technology Delhi (IIT Delhi)  
   Hauz Khas, New Delhi-110016

2. Please quote prices at FOB New Delhi, inclusive of installation charges.
3. The quotations should be in Indian Rupees as well as international currency 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 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/manufacturer 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.
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. Institute reserves the right to accept or reject any or all the quotations without assigning reasons thereof.