

## Revised Chapter 4

CPP TENDER ID: 2023\_CSIR\_170190\_1 Dtd 09.10.2023

PUR/IICT/DMS/1338/RE/23-24

### CORRIGENDUM

#### REVISED/AMENDED SPECIFICATIONS FOR SUPPLY INSTALLATION COMMISSIONING OF FLURESCENCE SPECTROPHOTOMETER

The following corrigendum is issued to above mentioned tender for supply of "Fluorescence Spectrophotometer"

The revised technical specifications are as below

#### **General Description:**

1. A combined steady-state, nanosecond fluorescence lifetime and phosphorescence lifetime measurement spectrometer with modular design and all reflective optics with perfect focus at all wavelengths and the highest sensitivity. The system should be consisting of comprehensive fluorescence spectroscopy package, manual and electronic interface. It should have all reflective L-Format optics sample compartment with reference channel excitation correction detector, standard single/four turret cuvette sample tray with one 10 mm quartz cuvette, manual filter holders. High sensitivity with >20,000:1 or better for the Signal-to-Noise ratio of the water Raman signal (measured with excitation at 350 nm with a 1 second integration time and 5 nm spectral bandwidth). Wavelength accuracy of  $\pm 0.5$ nm or better. Computer-controlled, continuously adjustable slits 0-20nm or more.

#### **2. Excitation Monochromator:**

Double excitation 350 mm Czerny-Turner coma-corrected monochromators (700 mm total focal length) each with triple grating turrets for extended wavelength selection (one grating included each), computer-controlled excitation shutter and computer-controlled slits, including computer controlled intermediate slit. Supplied with 1200 line/mm grating blazed at 300 nm blaze or better.

#### **3. Emission Monochromator:**

Single emission 350 mm Czerny-Turner coma-corrected monochromator with triple grating turrets for extended wavelength selection, and computer-controlled slits, including computer controlled intermediate slit. Supplied with 1200 line/mm grating blazed at 400 nm or better.



#### **4. Excitation Light Sources:**

-450Watt continuous wave Xenon lamp with all reflective collection optics and integrated power supply for steady state fluorescence measurements. Wavelength range: 220nm – 1100 nm or longer.

-Pulsed micro second Xenon flash lamp with integrated power supply and computer controlled high repetition rate (0.1Hz – 100Hz or better) and low optical pulse width (~3 microsecond or less) for phosphorescence measurements in the range of microsecond to second timescale.

-Pulsed laser diodes and pulsed LEDs for TCSPC measurements (4 numbers in total) with peak wavelengths of 360nm±10nm (pulsed LED with repetition rate up to 20 MHz), 390nm±10nm (pulsed laser diodes with repetition rate up to 20 MHz), 450nm±10nm (pulsed laser diodes with repetition rate up to 100 MHz), 532nm±10nm (pulsed laser diodes with repetition rate up to 100 MHz).

#### **5. Detectors:**

- PMT (200-850 nm or wider range below 200 and above 850 nm) detector kit with TE cooled housing with four detection modes (steady state in photon counting or analog mode, TCSPC lifetimes or phosphorescence) selected under computer control. Grating: 400nm or 500nm blazed, 1200 l/mm or 1800 grooves/mm density.

- Liquid nitrogen or TE cooled InGaAs solid-state photodiode-based detector (900-1600 nm or wider range with below 900 and above 1600 nm). Grating between 800nm and 1000nm blazed, density 600 l/mm or higher.

#### **6. Accessories:**

- 4-turret sample compartment

- Sample holder: Liquid/solid/powder

- Integrating Sphere for absolute Quantum Yield Measurement. Should be easily mounted with the spectrofluorimeter. Reflectivity from 250-2500nm. Should come with 10mm cuvette holder for liquid, and sample tray for solid or powders.

- Low temperature (liquid nitrogen) measurement accessory (upgrade option should be available up to 4K by attaching He cryostat)



- Automatic Polarization accessory for UV/VIS/NIR range
- Thermostatic cell holder with stirrer
- Cell holder with temp control
- Filter set (long pass and neutral density) with filter holder both in excitation emission side
- Quartz Fluorescence Cell, 4-sides and base polished, 10mm pathlength with 3.5 ml nominal volume with white PTFE screw cap: at least 4 No.
- All necessary Time resolved kit for Diode source on Spectrometer including Hub, Diode controller, delay box, sample compartment, and all cables and connections.
- Computer work station with compatible software for hardware control, data acquisition and processing.
- Suitable UPS with 30 min power back up with batteries.

**4.1 Scope of Supply and incidental works:** Please refer to Para 4.2 above.

**4.2 Inspection & Tests-**

Will be done to check the efficiency and efficacy of the contractual supply, if required.

**Important Terms and Conditions that must be met by the bidder/supplier:**

1. Total Cost must include comprehensive\_ (labor + parts, etc.) warranty on the complete system.
2. Total price must include transportation and complete installation of the units.
3. Detailed original literature indicating all technical specifications and features must be enclosed with the offer. Merely stating "compiled" in the compliance statement will not be considered and offer made will be disqualified.
4. Commitment for the supply of Complete Operating Instruction manuals, Manuals / diagrams and engineering details (including Refrigeration) to be supplied along with the system. Commitment to be made in the offer.
5. In case, CSIR-IICT opts for AMC/CMC after expiry of the warranty period, bidder should accept to extend the service on bill basis on completion of prescribed billing cycle (Half Yearly/Quarterly, etc) and no advance payment to be made.
6. All standard accessories that would be supplied with the system must be clearly mentioned in the offer.
7. Technical presentation/ demonstration of the offered equipment as per tendered and need to be provided, if so required by CSIR-IICT.
8. List of users (Govt. of India Institutes and research laboratories) of the similar models as the one(s) offered along with the names, addresses, telephone numbers and mail ID's to be



enclosed.

9. Availability of service support at site and response time for a service call during and after warranty to be specified.
10. The principals / local agents are responsible for the installation, testing and commissioning of the system and accessories.
11. Pre-installation and utility requirements for installation and running the system, if any, should be clearly mentioned in advance.
12. All other clauses of payment details, validity of quotation, delivering schedule, shipment etc. to be indicated.

**4.4 Training:** Free training should be imparted at the purchaser's premises on operation of the supplied item.

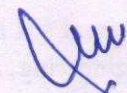
4.4.1: Total Cost must include 36 Months comprehensive onsite warranty (labor + parts, etc.) on the complete system.

**4.5 Warranty:**

36 Months comprehensive onsite warranty from the date of successful installation and final acceptance of the supplied system by CSIR-IICT user.

**Chapter 4 of the Original Tender Document stands substituted with this revised chapter 4 ( Corrigendum I). Bidders are requested to take a note of this changes.**

Bidders may please take note of the above changes and submit their quotations accordingly. All other technical specifications including due date of bid submission remain unchanged.

  
12.X.2023

Controller of Stores & Purchase  
CSIR-IICT