



**THAPAR INSTITUTE**  
OF ENGINEERING & TECHNOLOGY  
(Deemed to be University)

Thapar Technology Campus, Bhadson Road  
Patiala-147004, Punjab India

Ph. No. 0175-2393870, 3871

URL: [www.thapar.edu](http://www.thapar.edu), Email: [npsingh@thapar.edu](mailto:npsingh@thapar.edu), [ashwini.aggarwal@thapar.edu](mailto:ashwini.aggarwal@thapar.edu)

Enquiry No. TIET/CS/AA/SCBC/18223

Dated : July 27-2018

Sub: Request for Quotation(s) for supply of Time resolved fluorescence spectrofluorometer

Dear Sir

We shall be grateful if you kindly let us have your lowest quotations for the following materials/equipment. THE QUOTATIONS SHOULD REACH THE UNDERSIGNED LATEST BY 10 -August-2018 through courier or e-mail ( quotation sent by mail from distant locations needs also to be validated through courier/ regd post as hard copy) accompanied by appropriate illustrative literature/catalogues/pamphlets/technical details and specifications as the case may be.

On the quotation envelope/ subject the Enquiry Number & Date should be mentioned on the top of the Envelope/mail subject, quotation received after due date will not be considered and it must split and submitted in technical bid and commercial bid separately with technical bid to have list of references for same equipment/material supplied.

Sr. No.	Item Name	Qty.
1.	Time resolved fluorescence spectrofluorometer Specifications as per attached sheet	01 set

The offer sent by you must furnish the following mandatory details / enclosures in price bid:

1. Name, Make & specifications of each item.
2. Cost of the item with MRP.
3. Educational discount if any.
4. Validity of quotation should be at least 60 Days.
5. GST extra.
6. Delivery FOR Thapar Institute of Engineering & Technology, Patiala/ CIP Delhi for import products kindly mention HSS code of each product and attach copy of BOE of item last cleared in support
7. Insurance, Freight & other charges if any.
8. Minimum Delivery Period.
9. Payment terms. Net 30 days against delivery or satisfactory installation at Thapar Institute whichever applicable
10. Guarantee / Warranty Information.

Regards,

Sd/-

Head Commercial

## **Specification for TCSPC Lifetime Spectrometer System**

The instrument should contain optics and electronics that can detect lifetime (~10 ps or better) by means of time correlated single photon counting principle (TCSPC), using a single instrument. The system should be capable of operating in the range 10 kHz- 80 MHz or better repetition rate with supplied excitation sources. The system should be controlled via single USB cable to PC.

### **1 Excitation source:**

- a. Pulsed laser diode with peak wavelength 405nm +/-10nm be offered , Pulsed LED with peak wavelength 310 +/- 10 nm also should be offered with maximum warranty period.
- b. Comprises a stand-alone diode controller module used with interchangeable, hot-swappable, diode heads.
- c. Diode controller must feature USB interface and LCD display
- d. Laser diodes with software programmable repetition rate.
- e. Repetition rate of laser diode must be controlled from measurement software to match TCSPC time range.
- f. Instrument response function (IRF) of the system should be specified.

### **2 Detector:**

- a. Spectral sensitivity range of the detector should be 230 - 900 nm
- b. Fully integrated detection module with internal constant-fraction discriminator (CFD), as well as regulated high voltage power supply and 1GHz pre-amplifier.
- c. RF-grade enclosure - for maximum noise immunity and significant low dark current.
- d. Measure lifetimes in as short a period as about one millisecond

### **3 Monochromator & Sample Chamber :**

- a. Fully automated monochromator with integral safety shutter and software control of bandpass and wavelength
- b. Modular optical design - must be field upgradable to T-Format geometry.
- c. Automated sample chamber focusing.
- d. Front thermostated surface sample holder for use with solid or highly scattering samples should be offered. Adjustable positioning in two axes should allow optimized alignment.
- e. Quartz fluorescence cell with PTFE stopper (2 nos regular and one micro) should be offered.

### **4. TCSPC electronics:**

- a. Single timing module to cover picosecond to seconds time range.
- b. No requirement to operate in "Reverse TAC" mode at high repetition rate (i.e. "forward" mode only).
- c. Crystal-locked time base requiring no recalibration for life of instrument.
- d. Capable of streaming up to 1,000 decays per second over USB.
- e. USB interface (no PCI cards).
- f. A data acquisition device with variable timing delay and higher resolution should be supplied.
- g. A PC of higher configuration and online UPS (min 30 min back up) is required to meet the requirement of TCSPC Lifetime Spectrometer System for its smooth run.
- h. Electronics and related software for data analysis should be provided

## 6. General specifications:

- a. Warranty : At least one year or more
- b. Specify the details about the after sales services
- c. A detailed compliance statement against above mentioned technical specification should be enclosed in the technical bid.
- d. Onsite training and installation through qualified engineer should be provided free of cost.
- e. Any part/s or spare required including for optical performance of the Instrument which if missed out in the quote for any reason should be supplied by the vendor free of cost. The commissioned equipment must be complete in all respect and ready to use.
- f.

**Upgradation:** The Instrument must have option for upgradation to following accessories:

1. **Polarizers:** Motorized excitation and emission polarizers for doing Time Resolved anisotropy measurements
2. **Variable Temperature Measurements:** Peltier controlled variable temperature cell should be provided for measurements from -25 to +105 degC.
3. **Solid state Accessory:** Integrating sphere must be attached for time resolved measurement of solid samples