Department of Applied Chemistry

Technical specification for Fluorescence Spectrophotometer

1. The instrument must be capable of multiple data collection modes including fluorescence, phosphorescence, chemi-luminescence and bio-luminescence.
2. Light Source:The instrument must be a Xenon flash lamp based instrument that has room light immunity for fluorescence mode allowing samples or accessories to be measured without closing the sample compartment lid and minimum 2000 hr long life.
3. Measuring Wavelength: Excitation 200–800 nm and Emission 200–900 nm with zero order selectable.
4. Spectral Bandpass: Excitation Slit: 2.5 to15 nm, Emission Slit: 2.5 to 15 nm
5. Wavelength Accuracy: 1.5nm or better
6. Sensitivity:
   a. Signal-to-Noise level using the Raman band of water, excitation 350 nm (1 s Signal Averaging time)
   b. 720:1 RMS measuring noise on the Raman peak slits 10 nm, 1 s Signal Averaging time or more
7. Wavelength reproducibility: $\pm$ 0.5nm
8. Wavelength Scan Speed: 10-1200 nm/min in 1/10nm increments OR as per system requirement.
9. Detector: PMT both excitation and emission
10. System must have a septum injector on top the sample compartment for addition of reagent real-time while reaction is in progress Or system must be upgradable with stop flow accessories for controlled reagent addition.
11. Up gradation: System must be upgradable with fiber optic probe
12. Accessories: Solid sample holder accessory with edge mounting sample holder kit, Powder cell, single crystal holder kit & Cuvette holder kit.Single cell Peltier accessories with probe, pump/fluid circulator & software (0 to 100 DegC). Cuvette pair for 3ml& 1ml.
13. Software: Original Licensed Software should be quoted with following features:-
    a. Should have necessary electronics/accessories and user friendly software to attach to the serial port of compatible PC.
    b. Software should have kinetic, DNA/RNA & protein estimation, scan and time drive wavelength program data collection modes.
    c. Software should have 3D spectra acquisition and data analysis for purity studies and characterization of complex mixtures/Biological samples.
    d. Software should have time resolved measurement facility.
14. PC and Printer: OEM factory supplied OR Compatible i7 PC with 4GB, 500 GB HDD, Flat Screen Monitor, Optical Mouse, pre-loaded Windows and LaserJet Printer should be quoted along with system.
15. 5 KVA Or more (if required) capacity UPS with half an hour back up should be quoted along with system.
16. System should be quoted with 3-year standard warranty including UPS. System should be provided with 5 year lamp guarantee or one set of extra lamp must be offered.

Kiranmoy Kar
30/6/17

30/06/17