



INDIAN INSTITUTE OF TECHNOLOGY BOMBAY

MATERIALS MANAGEMENT DIVISION

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Technical Specifications for Stopped Flow FLUORESCENCE SPECTROMETER :

- **Light Source:** 450W ozone free Xe source or better for doing steady state fluorescence measurement with power supply.
- **Optics:** The system should be a mirror based for focusing at all wavelengths and precise imaging for micro samples
- **Excitation Spectrometer:** Czerny-Turner design based double Spectrometer with intermediate slit or better with 1200 g/mm gratings blazed between 300-350nm or better
- **Emission Spectrometer:** Czerny-Turner design based single Spectrometer or better with 1200 g/mm gratings blazed between 500-550nm or better
- **Dual Channel Fluorescence Detection**
- **Excitation and Emission wavelength Range:** 200-950nm or better
- **Bandpass:** The System should have continuously adjustable entrance and exit slits operated under computer control
- **Wavelength Accuracy:** +/- 0.5 nm or better
- **Signal to Noise Ratio:** Minimum 30,000:1 (RMS Method), >15,000:1 (FSD Method) using water Raman signal at excitation at 350 nm, emission at 397nm, Bandpass 5 nm and 1 sec integration time. Vendors have to mention both FSD and RMS values.
- **Reference Detector:** Photodiode detector should be provided
- **Emission Detector:** Photomultiplier tube detector should cover the wavelength range from 250-850 nm and should be operating in photon counting electronics mode.
- **Sample compartment:** The sample compartment should be enough space to accommodate cryostat in later stage
- **Cuvette:** Minimum of one 4 mL, 1 cm x 1 cm quartz cuvette
- **Solid sample holder:** One number of Solid sample holder should be provided for thin film, powders, pellets.

- **Order Sorting Filters:** Suitable order sorting filters in the range of 370nm, 399nm, 450nm, 500nm and 550nm along with holders should be offered
- **Variable Temperature Accessory:** Peltier accessory should be provided for the temperature range from -15°C to +105°C or better.
- **Anisotropy Accessory:** Automated dual polarizers should be provided for doing anisotropy measurements. Fluorescence Polarization/Anisotropy. T-Format measurement of Fluorescence Polarization and Anisotropy.
- **Stop flow accessory:** Should be provided for rapid kinetic measurements Optimized for both absorbance and fluorescence detection without the need for reconfiguration.
 1. Electronic Control Unit with Monochromator
 2. Stepper Motor Unit
 3. Unsurpassed sensitivity: ultrastable 75W xenon light source
 4. Power supply for Tungsten, Xenon & combined Mercury/Xenon Lamps
 5. Temperature range -20 to 100 deg C
 6. Fluorescence Enhancement Kit, Beam Splitter
 7. Long Optical Rail & Tool Kit,
 8. Fast A/D Converter (12 bit, 1.25 MHz)
- **Future upgradation:** The system should be field upgradable to Time Resolved measurement with TCSPC attachment and NIR measurements upto 1500nm or better.
- **Software and Computer:** A suitable fluorescence analysis software and branded computer should be supplied along with the system
- On Line 3 KVA UPS with half an hour back up to support the complete system
- **Warranty:** one year from the date of installation and additional three years comprehensive warranty.
- N2 Gas Cylinder and Double Stage Pressure Regulator should be supplied with instrument.

A DETAILED COMPLIANCE STATEMENT WITH RESPECT TO ABOVE MENTIONED SPECIFICATION SHOULD BE ENCLOSED ALONG WITH THE OFFER.