ANNEXURE– A

Technical Specification of Fourier Transform Infrared Spectrometer

Item	Description	Qty
Main	FT-IR Spectrometer, complete unit, Thermo scientific Nicolet iS5 or equivalent from a reputable brand with direct manufacturer support. It must have a strong track record for reliability, robustness and reproducibility. The FT-IR Spectrometer should be the latest technology to substantially elevate performance in quality control and routine laboratories testing applications. Instrument software should be capable of validation of instrument and self test the instrument.	01
Specifications		
Source	User replaceable Mid-infrared Ever-Glo source	
Detector	Fast recovery deuterated triglycine sulfate (DTGS) detector	
Beam Splitter	KBr/Ge Mid-infrared optimized	
Spectral Range	7800 – 350 cm^{-1}	
Signal –to-noise	22000:1 (peak to peak)	
Spectral Resolution	Better than 0.8 cm^{-1}	
Wavelength Accuracy	0.05 cm^{-1} at 2000 cm^{-1}	
Electronics	High speed bidirectional communication to PC	
Humidity and Temperature protection	Internal diagnostics with electronic humidity and heat sensors Instrument should be sealed and desiccated to protect optical unit from humidity	
Components	All spare parts should be user replaceable and with instant connect modules. User-replaceable source, desiccant, power supply and sample compartment window.	
Sampling Mode	Default transmission with accessory to make fast and	

	accurate measurements of gases, liquids and solids. Attenuated Total Reflectance unit with diamond crystal for liquid and solid samples (Diamond ATR) .	
Reference Library	Inorganic and organic chemicals, polymers, fibers, surfactants, minerals and all other possible offline libraries	
Data station	Core i5, 4 GB DDR III, 500 GB hard disk, DVD RW, LCD 19", Keyboard, Mouse	
Printer	HP Laserjet P1102	
Training	The supplier must provide training for the users of the instrument at site, after installation and commissioning.	
Software	Software for FT-IR Spectrometer must include following features: • User login and password protection • Live display of data collection and spectral data preview • Data processing, conversion and correlation • Spectral search and interpretation from internal offline reference library • Peak analysis tools: peak area, peak height • Automatic accessory detection and performance verification • Compatible with Microsoft Windows 7 and Windows 8 Software must be flexible such as the user could change the instrument configuration to respond to specific application and workload.	
System Warranty and Technical Support	On-site installation, commissioning and training by factory-trained engineer is required. The supplier must demonstrate that it has a proven appropriate set up and capability to provide after-sale service efficiently and effectively. Comprehensive support for equipment for a period of at least 12 months. The warranty shell commence upon successful completion of the acceptance test or commissioning.	
Note: Consumable parts and accessories for smooth running of instruments for period of ten years may also be provided by the supplier.		