**Name of the Equipment: UV-Vis-NIR spectrophotometer**
**Tender Ref. No: NABI/2(028)/20-21/N-PUR**

**Modified Technical Specifications after the Pre-bid meeting held at NABI**

**Amendments/Changes mentioned in Yellow Colour**

**Technical Specifications** for '**UV-Vis-NIR spectrophotometer system**'

The specification covers minimum requirements for the procurement of UV-Vis-NIR spectrophotometer, used for generating the spectra, absorption/transmission measurements inorganic and organic compounds of aerosol and BrC etc. in aerosol extracted in water/organic solvents (but not limited to these applications).

**Scan Mode**

1. System should have ultra-low stray light, ratio recording which should work in Transmission, Reflection and Absorption mode, Absorbance, % Transmittance, % Reflectance, Concentration. Instrument/software should have provision to work in reflectance mode .
2. Scanning, Quantitative analysis, Kinetics experiment
3. Double beam; double monochromator
4. Should hold multiple (minimum 1 or more), 10 mm standard (3 ml) rectangular cells and (1 or more) Micro (300-700 µl) Multi-cell holder with similar/constant optical path length, Constant Temperature type

**Ambient Temperature**

1. 15– 35 Deg. C

**Ambient Humidity**

1. 35-80% (no condensation, less than 70% at temp. above 30°C)

**Temperature controller**

1. Use in sample and reference position for all samples simultaneously (i.e. for 1 or more samples and reference simultaneously)
2. Temperature controller (5 to 60°C)
3. Measure multi-cell kinetics

**Wavelength Range**

1. 190 – 3000 nm or better

**Spectral Bandwidth**

1. 0.2 - 5.00 nm (UV-Vis)
2. 0.2 - 20 nm (NIR)

**Light Source**

1. Halogen Deuterium Tungsten lamp.
2. Software selectable switchover of lamps from UV to Visible range
3. Automatic adjustment of light source position

**Detector**

1. High performance Photomultiplier detector for UV visible region.
2. InGaAs and Cooled PbS detector for NIR region

**Integrating sphere attachment**

Integrating sphere attachment for diffuse reflectance and transmittance measurement of opaque sample, Powders, and solid samples with appropriate sample holders, fix angle specular reflectance. Wavelength range: 250 to 2500 nm or better, Detector: PMT and PbS detectors or PMT, InGaAs and PbS detectors. Film/Solid Sample holder for transmittance measurements of Films. **The item will be considered for financial bid comparison. Please read the line in the Boq Sr. No: 1.02 as considered for financial bid comparison instead of Not considered for financial comparison mentioned earlier.**

**Wavelength Accuracy**

1. +/- 0.2 nm (UV), +/- 0.8 (NIR). Or better

**Wavelength Repeatability**

1. +/- 0.08 nm UV (SD of 10 measurements), +/- 0.35 NIR. Or better

**Wavelength Scanning Speed**

1. UV-Vis 2000 nm/min or more
2. NIR 2000 nm/min or more

**Photometric Display Value Range**

1. ±6 abs or better

**Photometric Accuracy**

1. 1A: ± 0.003A; 0.5A: ± 0.002A or better

**Stray Light**

1. 0.00008 @ 220 nm;
2. 0.0005%T @1420 nm;
3. 0.005%T @2365nm or better

**Performance verification**

1. Should have inbuilt performance verification programme with limits mentioned as a standard feature in software

**Connectivity**
System should be PC controlled (with USB ports), to support flash memory for method and data storage.

**Computer**
Branded desktop PC with following configurations: Processor Core – i7, RAM – 8 GB DDDR3, HDD – 1 TB, Licensed OS - Windows 10, Input Devices - Keyboard & Mouse, Display - 22", Laser Printer

**Software**

1. Should have instrument control software including: wavelength scanning, single and multiple fixed wavelength, wavelength ratios, quantitative analysis and for running customized method scripts; Kinetics with time scan.
2. Should have multitasking options with all spectral & mathematical functions
3. Should be able to transfer data in excel or csv format

**Cuvettes**
1. 10mm quartz cuvettes with lid for complete UV-Vis-NIR range
2. Minimum 4 pair should be supplied (both regular-3ml (4 pair) and micro-200 to 700 µl (4 pair))

**Warranty**
**1.** Three Years Warranty

**Other Terms**

1. Bidder should demonstrate the quoted system for the user's samples within stipulated time frame (during technical evaluation).
2. Bidder should provide complete set of technical and operational manual during bid submission.
3. Bidder should clearly specify pre-requisites for installation and operation.
4. Bidder should provide operational training for minimum 2 personnel at the user's lab, after installation.

Apart from the above-mentioned changes in yellow colour all other specs, terms and conditions shall follow as per the tender terms and conditions.

**Stores and Purchase Officer**