**RFQ049 Appendix B2 Lot 2 Chemistry Equipment**

Please find the specifications for the following equipment

### **Portable Balance (500g) 0.01g**

* **Nuclear Magnetic Resonance Spectrometer**
* **Mass spectometer**
* **Alpha-P FTIR Spectrometer**
* **Biochrom WPA Lightwave II  80-3003-72  + software**

**Portable Balance**

* RS232 Interface
* Weighing modes: Grams and Newtons
* Multiple application modes and units
* Weigh-below hook
* Integral security bracket
* integral menu lock
* AC Adaptor

**Nuclear Magnetic Resonance Spectrometer**

* 60 MHz rare-earth permanent magnet
* Cryogen-free system
* Benchtop NMR system - no dedicated room required
* Fully auto shimming - no manual shimming required
* 19F or 1H measurements on single probe
* 13C option
* Software and hardware locks to give optimised performance for every experiment
* 2D homo- and heteronuclear sequences including COSY, J-resolved, TOCSY, DEPT and HMQC
* Perpetual license for Mnova software from Mestrelab
* Perfect for teaching departments - easily operated by undergraduate students

**Mass spectrometer**

* Type: MAX-500HT
* Mass Range: 1-500amu
* Relative Transmission 60%
* Resolution (M/ΔM FWHM): 2000
* Sensitivity (mA/Torr): 2

Comprehensive range of application specific configurations for atomic and molecular physics and chemistry experiments including;

* Temperature programmed desorption
* Static and dynamic SIMS/SNMS
* Laser molecule interactions
* Photoionization
* UHV and XHV Outgassing studies
* Molecular beam studies
* Helium scattering
* Cluster analysis

19mm triple filter quadrupole rod set, delivering far superior sensitivity, abundance sensitivity, transmission and resolution characteristics than the smaller quadrupole rod sets available

* 9.5mm or 19mm high transmission and resolution triple filter quadrupole
* Mass range options from 60amu to 16,000amu
* Positive ion and negative ion measurement
* Appearance potential and electron attachment modes for neutrals and radicals
* Dual analogue and ion counting detector for highest dynamic range
* Conversion dynode
* Pole bias mid-axis potential
* Einzel lens optics
* Axial and right angle sampling configurations
* 1E-16mbar detection capability
* Tandem source with high transmission energy filter with <0.5eV energy resolution
* Photoionization cross beam source
* Enclosed CI source

**Alpha-P FTIR Spectrometer**

* One reflection diamond crystal
* Small footprint 22x30cm
* Spectral range 375-7,500cm-1
* One finger clamp mechanism
* Pressure Control
* max Sample height 20mm
* Easy cleaning
* Exchangable ATR crystal plate with electronic recognition
* Spectral resolution better than 2cm-1
* RockSolid Interferometer , gold mirrors
* Detector DTGS
* Source SiC globar
* Opus/Mentor software package
* Opus/Search software in spectra libraries
* Warranty Extension for 10 years for ATR module, Interferometer, and Laser
* 5 Year Warranty Extension for MIR source
* 12 months on-site warranty, User training, Delivery, Installation
* Dimensions 22cmx30cm

**Biochrom WPA Lightwave II 80-3003-72  + software**

* Min wavelength: 190nm
* Max wavelength: 1100nm
* Bandwidth: 5nm
* Scanning: yes
* Beam format: Split
* Cell holder: Single
* Optical System Monochromator Holographic Grating
* Detector 1024 CCD array
* Photometric Range -0.300 to 2.500A, 0 to 199%T
* Photometric Accuracy +/- 0.008Abs or 1.3% of the reading, whichever is greater between 0 and 2.5A
* Photometric Reproducibility 0.002A at 0 - 0.5A at 546nm

Dimensions

* Width 260mm
* Depth 390mm
* Height 100mm