# *ANNEX II + III:* TECHNICAL SPECIFICATIONS + TECHNICAL OFFER

**Contract title: Supply of laboratory equipment for the purposes and functioning of scientific laboratories of the Blue Growth Research centre at Trakya University in Lots**

**Lot 4 Supply of Lab systems and equipment p 1 /…**

**Publication reference:** CB005.3.12.001 - PP – Supply 7

**Columns 1-2 should be completed by the contracting authority**

**Columns 3-4 should be completed by the tenderer**

**Column 5 is reserved for the evaluation committee**

Annex III - the contractor's technical offer

The tenderers are requested to complete the template on the next pages:

* Column 2 is completed by the contracting authority shows the required specifications (not to be modified by the tenderer),
* Column 3 is to be filled in by the tenderer and must detail what is offered (for example the words ‘compliant’ or ‘yes’ are not sufficient)
* Column 4 allows the tenderer to make comments on its proposed supply and to make eventual references to the documentation

The eventual documentation supplied should clearly indicate (highlight, mark) the models offered and the options included, if any, so that the evaluators can see the exact configuration. Offers that do not permit to identify precisely the models and the specifications may be rejected by the evaluation committee.

The offer must be clear enough to allow the evaluators to make an easy comparison between the requested specifications and the offeredspecifications.

| **1.**  **Item number** | **2.**  **Specifications required** | **3.**  **Specifications offered** | **4.**  **Notes, remarks,  ref to documentation** | **5.**  **Evaluation committee’s notes** |
| --- | --- | --- | --- | --- |
| **1** | Differential Scanning Calorimeter (DSC) – 1 pcs.  1. The system should allow DSC measurements between -150 and 600°C.  2. The system shall be capable of running in oxidizing, inert and reducing sample atmospheres.  3. The system must have a user exchangeable high-resolution Heat Flux Sensor.  4. Heating/Cooling rates should between 0,02 and 100K/min.  5. Air Cooling rate should be minimum 0,02 to 30 K/min without external cooling source  6. The software should include calibration routines and offer the possibility for automatic baseline correction of the DSC signal.  7. A closed loop cooling system which allows to cool minimum -80 °C should be included within the system.  8. The system must be delivered with at least 4 standards to allow calibration for temperature and DSC by the user.  9. A Thermal Library sample database has to be available.  10. DSC operating and evaluation software and a computer (Minimum intel i7 10th gen or equivalent, Minimum 16 gb Ram and Minimum 250 gb SSD, Minimum 23 inch monitor, Windows 10 or equivalent) should be provided.  11. The system must operate with a USB interface or equivalent  12. The device should be guaranteed for at least 2 year against any manufacturing and assembly defects. Spare parts and service must be guaranteed for 10 years after the end of the warranty period. |  |  |  |
| **2** | **Fluorescence Spectrophometer** (SOLID AND LIQUID) – 1 pcs.  1. The instrument must be capable of multiple data collection modes including fluorescence, phosphorescence, chemi-luminescence and bio-luminescence.  2. System should have variable wavelength.  3. The instrument must be a Xenon flash lamp based instrument. The Xe flash lamp will also minimize fluorescence photo-bleaching of any samples and must also flash at 80 Hz to allow fast data collection.  4. The instrument beam must have horizontal excitation beam geometry for maximum collection efficiency and to permit the use of low sample volumes in cuvettes.  5. The instrument must be capable of enhanced sensitivity above 700 nm with a photomultiplier tube and measuring picomolar amounts of fluorescein.  6. The instrument must have a guaranteed signal-to-noise specification of >500:1 for the Raman Band of Water – excitation at 500 nm, 1 sec signal averaging time..  7. The instrument must be capable of measuring four or greater cells automatically and must have a temperature accuracy of +/- 0.1 - 0.5 °C.  8. The instrument must have the ability to measure the exact temperature of the solution using independent temperature probes and have the ability to ramp the temperature range.  9. The instrument must be capable of collect at microsecond time intervals for phosphorescence applications.  10. The instrument must add solid sample holder and solid sample prob accessory.  11. The software must have the ability to measure multiple ramps and within each ramp  must have the ability to collect at different data intervals.  12. The system must be capable of reading microplates for high throughput analysis.  13. System should supply along with solid sample measuring accessory.  14. An Extension apparatus should be provided for reaction monitoring outside the device body.  15. Two suitable quartz cells should be provided. Cell properties; Spectral range 200-2,500 nm, optical path lenght: 10x10 mm, Volume: 3500 µl  16. Spectrophotometer operating and evaluation software and a computer (Minimum intel i5 10th gen or equivalent, Minimum 8 gb Ram and Minimum 250 gb SSD, Minimum 15 inch screen Windows 10 or equivalent) should be provided.  17. The device should be guaranteed for at least 2 years against any manufacturing and assembly defects. Spare parts and service must be guaranteed for 10 years after the end of the warranty period. |  |  |  |
| **3** | FTIR spectrometer for polymer analysis (1 peace)  1. The system must be sealed and removed from moisture. It should not need to purge with any gas.  2. FTIR spectrometer for polymer analysis should be library of ATR-FTIR polymer spectrums and additives (ATR Polymers and Polymer Additives), specifically formatted for FTIR.  3. The standard spectral resolution of the system should be less than 2 cm-1.  4 Spectrometer should be able to work between 4000 cm-1 and 400 cm-1.  5. Communication between spectrometer and computer should be provided via USB port without needing any interface card.  6. The system should have Diamond ATR unit.  7. Spectrometer should use 24-bit delta-sigma A / D converter.  8. The system should be compatible for units such as ATR, Transmission, diffuse reflectance, and these units should be easily installed and removed.  9. At least five (5) years lifespan for the interferometry and laser source of the system and at least three (3) years for the light source provided  10 The software of the device should work with Win 10 or equivalent, operating system and computer system should be included.  11. Device should be compatible with liquid samples or Liquid sample apparatus should be added without device changes (in plug-in / plug accessory form) and the software should recognize them automatically.  12. The device should be guaranteed for 2 years and 10 years parts support should be provided in return of its fee. |  |  |  |
| **4** | Schlenk line system – 1 pcs.  1. The set-up shall be delivered as a set with all the accessories requested.  2. The contents of the device, 4-way and 2-way N2 / vacuum interchangeable rack with glass dimensions height 19 cm, length 50 cm, double cooling trap with a capacity of 500 ml will be given with connection apparatus and all flanges for transition between this cooling trap.  3. Device holder stand for glassware should be provided.  4. The device must be of oily type and made of chemical resistant material.  5. The volume flow rate of the device should be between 5-10 m3 / s.  6. Device should have vacuum pump and vacuum of the device is should between 1x 10-3- 5 10-3- mmHg  7. Oil mist filter and isolation valve should be provided with the device.  8. Adjustable Vacuum regulator should be provided. |  |  |  |
| **5** | **UV-VIS SPECTROMETER (1 peace)**  1. The instrument must be capable of multiple data collection modes (single wavelength, scanning and kinetics modes)  2. The instrument must be a Xenon flash lamp-based instrument that has room light immunity allowing samples to be measured, or accessories to used, without closing the sample compartment lid. The Xenon flash lamp will also minimize photo-bleaching of any samples and must also flash at 80 Hz to allow fast data collection.  3. The lamp will only illuminate when taking a reading saving energy and maximizing lamp life when compared to other deuterium lamp (D2) systems.  4. Scan rates of between 20000-30000 nm/min without wavelength shift.  5. Data collection up to between 60-100 data points/second for single wavelength kinetics measurements.  6. The spectrophotometer should be operated using either a desktop computer or a laptop, connecting via a USB cable.  7. A suitable branded PC and Windows 10 based software or equivalent, for full reporting options should be quoted.  8. Ease of use – simple installation and tutorials on how to use software applications for a wide range of users.  9. Two suitable quartz cells should be provided. Cell properties; Spectral range 200-2,500 nm, optical path length: 10 mm, Volume: 3500 µl  10. Instrument should be upgradable for diffuse reflectance accessory as well as micro sample facilities in future.  11.The device should be guaranteed for at least 2 year against any manufacturing and assembly defects. Spare parts and service must be guaranteed for 10 years after the end of the warranty period. |  |  |  |
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