# *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 2 Supply of Nuclear Magnetic Resonance spectrometer 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** | Nuclear Magnetic Resonance spectrometer – 1 pcs  1- The nuclear magnetic resonance frequency of the device should be ≤ 80 MHz.  2- The device must be capable of performing NMR analysis on two different cores: 1H, 19F and 13C.  3- For 1H in the desktop FT-NMR the resolution at 50% peak height <0.5 Hz and 0.55% peak height <20 Hz line width should be able to detect the sample without rotating the sample and without any mathematical processing to minimize the linewidth of NMR data.  4- The device must have the latest enhanced magnet version.  5- The device must have a design that will provide the best system stability, so that it is sufficient to perform “Shim” only once a day, not after each sample.  6- The device must have a fast external lock system. In this way, it should be able to work without the need for deuterium solvents. The functions of the key system should be able to operate independently of the sample.  7- 1H Sensitivity of the device (dual channel); >160:1 for 1% Ethyl Benzene  8- NMR tube to be used with the device; There should be a standard 5 mm / 7 inch NMR tube.  9- The computer to be used with the device must be in Windows 10 or eqivalent. It should be possible to process the data obtained with MNova.  10- The device should be able to operate without the need for liquid nitrogen / helium.  11- The magnet and electronic unit of the device should be integrated as a single unit.  12- The computer and monitor of the device must be separate and system independent, and must be delivered with the device.  13- Application / Measurement Protocol Library;  Proton 1H: 1D proton, 1D with 19F and 13C decoupling, 2D COSY, 2D TOCSY, 2D JRES, T1 , T2  Reaction Monitoring  Carbon 13C: 1D, 1D with 1H and 19F decoupling, DEPT  2D multi core correlation: HMBC, HMQC, HSQC  Fluorine 19F: 1D Fluorine with 1H decoupling, Paramagnetic  2D F-COSY, 2D F-JRES, 2D FH-COSY T1  Reaction Monitoring  All these protocols in the library should be able to work.  14- The instrument must have advanced Autoshim protocols for system setup procedure or Reaction Monitoring system control and the system should be able to add an Online Reaction Monitoring system to the device if needed.  15- The device must have measurement protocols designed for users with different degrees of experience.  16- The leakage area of the magnet should be completely inside the device and should be <2 Gauss.  17- The magnetic field to be formed in the device should not contain any danger that may threaten the health of the operators, and the formed magnetic field should not be disturbed by being affected by other devices and equipment in the laboratory.  18- The latest version of Mnova NMR software should be provided with perpetual license  19. The device should be guaranteed for at least 2 year against any manufacturing and assembly defects. Spare parts and service of must be available for 10 years after the end of the warranty period. |  |  |  |