**ANNEX NO. 3 OF DOCUMENTATION OF THE PROCUREMENT PROCEDURE**

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**SPECIFICATION OF THE PUBLIC CONTRACT SUBJECT**

The subject of the public contract shall meet the following requirements for technical parameters and equipment:

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| **Technical specification – Scanner** | | |
| **Designation of the delivery (min. brand and type)** | |  |
| **Individual technical parameters of the performance** | | **Data about the offered performance** |
| 1 | Decoupled X, Y, and Z flexure scanners |  |

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| **Technical specification**­­ **­– AFM System** | | |
| **Designation of the delivery (min. brand and type)** | |  |
| **Individual technical parameters of the performance** | | **Data about the offered performance** |
| 1 | AFM scanner:   * XY scan range: min. 50 x 50 µm * Closed-loop feedback control |  |
| 2 | AFM head: Z scan range min. 15 µm |  |
| 3 | Camera:   * top view * min. 10x objective * min. 1.2 M pixel CCD camera * field of view: min. 480 µm x 360 µm |  |
| 4 | Focus stage for Optics:   * motorized * stage travel range: min. 15 mm * step: min. 0.06 µm |  |
| 5 | Sample Mount:   * Max. sample thickness – min. 20mm * Max. sample dimension – min. 100 mm x 100 mm * Magnetic sample holder * Bias range to sample: min. -10 V to 10 V |  |
| 6 | XY stage:   * motorized * range: min. 20 mm x 20 mm * step: min. 0.6 µm |  |
| 7 | Z stage:   * motorized * stage travel range: min. 22 mm * stage step: min. 0.08 µm * automatic cantilever engage to the sample surface |  |
| 8 | Control Electronics:   * min. 100 Mbps communication with the PC * min. four integrated lock-in amplifiers |  |
| 9 | Step scan functionality: enabling automatic sequential imaging of a sample at the selected coordinates |  |
| 10 | AFM Modes – min.:   * Tapping mode and Phase imaging * Q control * Contact mode and Lateral Force Microscopy * Force distance spectroscopy * Nanoindentation * Magnetic Force Microscopy * Electric Force Microscopy * Piezoelectric Force Microscopy * Kelvin Probe Force Microscopy * Thermal vibration calibration of the cantilever spring constant |  |
| 11 | Conductive AFM module:   * Low-noise current amplifier with power supply * Variable gain * Gain range: min. 10^3 to 10^9 V/A * Noise level: min. 0.3 pA * Current range: min. -10 mA to 10 mA |  |
| 12 | Active Vibration Isolation |  |
| 13 | Software for data acquisition, operation, and image processing |  |
| 14 | Computer compatible with the software and AFM electronics:   * RAM: min. 16 GB RAM * disc: min. 512 GB SSD + min. 1 TB HDD * monitor: two LCD monitors – min. 23 inches, min. 1920 x 1080 pixel * operating system: min. Microsoft Windows 10 Professional or higher (the participant is entitled to offer an equivalent solutions). |  |

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| **Technical specification**­­ **­– Optional future upgrades\*** | | |
| **Designation of the delivery (min. brand and type)** | |  |
| **Individual technical parameters of the performance** | | **Data about the offered performance** |
| 1 | Min. 100 µm scanner |  |
| 2 | Signal Access Module   * Access to analog input and output signal of the AFM |  |
| 3 | Temperature Controlled Stage |  |
| 4 | Scanning Thermal Microscopy |  |
| 5 | Photo Current Mapping |  |

\*These Optional future upgrades are not the subject of the public contract.