



**FZU**

Institute of Physics  
of the Czech  
Academy of Sciences

[www.fzu.cz](http://www.fzu.cz)

## Purchase Contract

(hereafter the “Contract”)

### 1. CONTRACTUAL PARTIES

#### 1.1 Fyzikální ústav AV ČR, v. v. i.,

with seat: Na Slovance 1999/2, 182 21 Praha 8,  
represented by: RNDr. Michael Prouza, Ph.D., Director,  
Registered in the Register of public research institutions of the Ministry of Education, Youth and Sports  
of the Czech Republic.

Bank: [REDACTED]  
Account No.: [REDACTED]  
ID No.: 68378271  
Tax ID No.: CZ68378271

(hereinafter the “Buyer”)

and

#### 1.2 NANOMAX s.r.o.,

with seat: Novičí 76, 679 61 Letovice,  
represented by: Ivo Polák, Director,  
registered at regional court in Brno, section C, folder 84970.

Bank: [REDACTED]  
Account No.: [REDACTED]  
ID No.: 03491366  
Tax ID No.: CZ03491366

(hereinafter the “Seller”),

(the Buyer and the Seller are hereinafter jointly referred to as the “Parties” and each of them  
individually as a “Party”).



EUROPEAN UNION  
European Structural and Investment Funds  
Operational Programme Research,  
Development and Education

  
MINISTRY OF EDUCATION,  
YOUTH AND SPORTS

## 2. FUNDAMENTAL PROVISIONS

- 2.1 The Buyer is a public research institution whose primary activity is scientific research in the area of physical sciences, especially elementary particles physics, condensed systems, plasma and optics.
- 2.2 The Buyer wishes to acquire the subject of performance hereof (Equipment for sensitive multifrequency Piezoelectric Force Microscopy measurements) in order to perform measurements to identify the ferroelectric domains at the mesoscopic level; to detect local electrical polarization direction; to measure local hysteresis loops at a nanoscopic scale; to manipulate with the ferroelectric domains; to locally reverse the polarization of ferroelectric materials and nanostructures; to study ferroelastic domains.
- 2.3 The Buyer is the beneficiary of the subsidy for the project "**Solid state physics for the 21st century (SOLID 21)**", Registry No CZ.02.1.01/0.0/0.0/16\_019/0000760 (hereinafter the "**Project**"), within the Operational Program Research, Development and Education (hereinafter the "**OP RDE**") of the provider Ministry of Education, Youth and Sports of the Czech Republic. The subject of public procurement will be co-financed by the EU Structural Funds.
- 2.4 The Seller was selected as the winner of a public procurement procedure announced by the Buyer in accordance with Act No. 134/2016 Coll., on Public Procurement, as amended (hereinafter the "**Act**"), for the public contract called "**Equipment for sensitive multifrequency Piezoelectric Force Microscopy (PFM) measurements**" (hereinafter the "**Procurement Procedure**"). Both the Procurement Procedure and the Contract shall be governed by the Rules for applicants and beneficiaries of OP RDE, which are publicly accessible and are binding on the Parties.
- 2.5 The documentation necessary for the execution of the subject of performance hereof consist of
- 2.5.1 Technical specifications of the subject of performance hereof attached as **Annex No. 1** hereto.
- 2.5.2 The Seller's bid submitted within the Procurement Procedure in its parts which describe the subject of performance in technical detail (hereinafter the "**Sellers's Bid**"); the Sellers's Bid forms **Annex No. 2** to this Contract and is an integral part hereof.

In the event of a conflict between the Contract's Annexes the technical specification / requirement of the higher level / quality shall prevail.

- 2.6 The Seller declares that he has all the professional prerequisites required for the supply of the subject of performance under this Contract, is authorised to supply the subject of performance and there exist no obstacles on the part of the Seller that would prevent him from supplying the subject of this Contract to the Buyer.
- 2.7 The Seller acknowledges that the Buyer considers the Seller's participation in the Procurement Procedure, provided that the Seller complies with all qualification requirements, as the confirmation of the fact that the Seller is capable of providing performance under the Contract with such knowledge, diligence and care that is associated and expected of the Seller's profession, and that the Seller's potential performance lacking such professional care would give rise to corresponding liability on the Seller's part. The Seller is prohibited from misusing his qualities as the expert or his economic position



EUROPEAN UNION  
European Structural and Investment Funds  
Operational Programme Research,  
Development and Education



MINISTRY OF EDUCATION,  
YOUTH AND SPORTS

in order to create or exploit dependency of the weaker Party or to establish an unjustified imbalance in the mutual rights and obligation of the Parties.

- 2.8 The Seller acknowledges that the Buyer is not in connection to the subject of this Contract an entrepreneur and also that the subject of this Contract is not related to any business activities of the Buyer.
- 2.9 The Seller acknowledges that the production and delivery of the subject of performance within the specified time and of the specified quality, as shown in Annexes No. 1 and 2 of this Contract (including the invoicing), is essential for the Buyer. If the Seller fails to meet contractual requirements, it may incur damage of the Buyer.
- 2.10 The Parties declare that they shall maintain confidentiality with respect to all facts and information, which they learn in connection herewith and / or during performance hereunder, and whose disclosure could cause damage to either Party. Confidentiality provisions do not prejudice obligations on the part of the Buyer arising from valid legislation.

### **3. SUBJECT-MATTER OF THE CONTRACT**

- 3.1 The subject of this Contract is the obligation on the part of the Seller to deliver and transfer into the Buyer's ownership:

the **Equipment for sensitive multifrequency Piezoelectric Force Microscopy (PFM) measurements** (hereafter the "**Equipment**")

and the Buyer undertakes to take delivery of the Equipment and to pay to the Seller the agreed upon price.

#### **3.2 The subject of the tender shall include of the following parts:**

- 3.2.1 Scanning Probe Microscope (SPM) capable of performing (besides standard operating modes like contact AFM, tapping AFM) sensitive vertical and lateral PFM measurements, in particular in tip-sample contact resonance tracking mode; Switching spectroscopy PFM; Kelvin probe force microscopy measurements and conductive AFM measurements;
- 3.2.2 Acoustic enclosure in order to provide acoustic isolation;
- 3.2.3 Passive vibration isolation system (built-in or freestanding);
- 3.2.4 Top-view optical video system with a good resolution;
- 3.2.5 Open source control software with basic analysis features;
- 3.2.6 SPM controller with at least 3 dual Lock-in Amplifiers.

- 3.3 The following activities form an integral part of the performance to be provided by the Seller:



EUROPEAN UNION  
European Structural and Investment Funds  
Operational Programme Research,  
Development and Education

MINISTRY OF EDUCATION,  
YOUTH AND SPORTS

- 3.3.1 Formulation of conditions which must be met at the place of Buyer in order to install the Equipment;
  - 3.3.2 Transport of the Equipment incl. all accessories specified in Annexes 1 and 2 of the Contract to the site, un-packaging and control thereof;
  - 3.3.3 Installation of the Equipment including connection to installation infrastructure at the site;
  - 3.3.4 Execution of the site acceptance tests (SAT);
  - 3.3.5 Delivery of instructions and operating and repair manuals to the Equipment in Czech or English language to the Buyer, in electronic and hardcopy (printed) versions;
  - 3.3.6 Training of operators at the site (at least three-day training of 2 operators);
  - 3.3.7 Free-of-charge warranty service including service inspections;
  - 3.3.8 Provision of the lifetime technical support in the form of consultations.
- 3.4 The subject of performance (Equipment) is specified in detail in Annexes No. 1 and No. 2 hereto.
- 3.5 The Seller shall be liable for the Equipment and related services to be in full compliance with this Contract, its Annexes, the submitted bid and all valid legal regulation, technical and quality standards and that the Buyer will be able to use the Equipment for the defined purpose. In case of any conflict between applicable standards it is understood that the stricter standard or its part shall always apply.
- 3.6 The delivered Equipment and all its parts and accessories must be brand new and unused.

#### **4. PERFORMANCE PERIOD**

- 4.1 The Seller undertakes to manufacture, deliver, install and handover the Equipment to the Buyer within 6 months of the conclusion of this Contract.
- 4.2 The performance period shall be extended for a period during which the Seller could not perform due to obstacles on the part of the Buyer.

#### **5. PURCHASE PRICE, INVOICING, PAYMENTS**

- 5.1 The purchase price is based on the Seller's submitted bid and amounts to **7 200 000,- CZK** (in words: sevenmilliontwohundredthousand Czech Crowns) excluding VAT (hereinafter the "**Price**"). VAT shall be paid by the Buyer and settled in accordance with the valid Czech regulation.
- 5.2 The Price represents the maximum binding offer by the Seller and includes any and all performance provided by the Seller in connection with meeting the Buyer's requirements for the proper and complete delivery of the Equipment hereunder, as well as all costs that the Seller may incur in connection with the delivery, installation and handover, and including all other costs of expenses that may arise in connection with creation of an intellectual property and its protection.



- 5.3 The Parties agreed that the Price shall be invoiced under the following terms:
- 5.3.1 The Seller is entitled to issue an advance invoice corresponding to 20 % of the total Purchase Price of 1 440 000,- CZK excluding VAT after the conclusion of the Contract.
  - 5.3.2 The remaining part of the Price shall be invoiced after the handover protocol in accordance with Section 10.4 will have been signed. In case the Equipment will be delivered with minor defects and / or unfinished work, the Price shall be invoiced after removal of these minor defects and / or unfinished work.
- 5.4 The invoice issued by the Seller as a tax document must contain all information required by the applicable laws of the Czech Republic. Invoices issued by the Seller in accordance with this Contract shall contain in particular following information:
- 5.4.1 name and registered office of the Buyer,
  - 5.4.2 tax identification number of the Buyer,
  - 5.4.3 name and registered office of the Seller,
  - 5.4.4 tax identification number of the Seller,
  - 5.4.5 registration number of the tax document,
  - 5.4.6 scope of the performance (including the reference to this Contract),
  - 5.4.7 the date of the issue of the tax document,
  - 5.4.8 the date of the fulfilment of the Contract,
  - 5.4.9 purchase Price,
  - 5.4.10 registration number of the Project,
  - 5.4.11 registration number of this Contract, which the Buyer shall communicate to the Seller based on Seller's request before the issuance of the invoice,
- and must comply with the double taxation agreements, if applicable.
- 5.5 The Buyer prefers electronic invoicing, with the invoices being delivered to [efaktury@fzu.cz](mailto:efaktury@fzu.cz). All issued invoices shall comply with any international double taxation agreements, if applicable.
- 5.6 Invoices shall be payable within thirty (30) days of the date of their delivery to the Buyer. Payment of the invoiced amount means the date of its remittance to the Seller's account.
- 5.7 If an invoice is not issued in conformity with the payment terms stipulated by the Contract or if it does not comply with the requirements stipulated by law, the Buyer shall be entitled to return the invoice to the Seller as incomplete, or incorrectly issued, for correction or issue of a new invoice, as



appropriate, within five (5) business days of the date of its delivery to the Buyer. In such a case, the Buyer shall not be in delay with the payment of the Price or part thereof and the Seller shall issue a corrected invoice with a new and identical maturity period commencing on the date of delivery of the corrected or newly issued invoice to the Buyer.

5.8 The Buyer shall be entitled to unilaterally set off any of his payments against any receivables claimed by the Seller due to:

5.8.1 damages caused by the Seller,

5.8.2 contractual penalties.

5.9 The Seller shall not be entitled to set off any of his receivables against any part of the Buyer's receivable hereunder.

## **6. OWNERSHIP TITLE**

6.1 The ownership right to the Equipment shall pass to the Buyer by handover. Handover shall be understood as delivery and acceptance of the Equipment duly confirmed by Parties on the Handover Protocol.

## **7. PLACE OF DELIVERY OF THE EQUIPMENT**

7.1 The place of delivery and handover of the Equipment shall be the room No. 128 in the main building of Fyzikální ústav AV ČR, v. v. i. (Institute of Physics AS CR), at Na Slovance 1999/2, 182 21 Praha 8, Czech Republic.

## **8. PREPAREDNESS OF THE PLACE OF DELIVERY**

8.1 The Seller shall notify the Buyer in writing of the exact date of installation of the Equipment at least 15 days prior to such date, ensuring that the deadline for the performance hereunder is maintained.

8.2 The Buyer shall be obliged to allow the Seller, once the deadline set forth in Section 8.1 hereof expires, to install the Equipment at the place of performance.

## **9. COOPERATION OF THE PARTIES**

9.1 The Seller undertakes to notify the Buyer of any obstacles on his part, which may negatively influence proper and timely delivery of the Equipment.

9.2 The Buyer shall be entitled to receive information on the progress with the Equipment manufacture.

## **10. DELIVERY, INSTALLATION, HANDOVER AND ACCEPTANCE**

10.1 The Seller shall transport the Equipment at his own cost to the place of handover. If the shipment is intact, the Buyer shall issue delivery note for the Seller.



- 10.2 The Seller shall perform and document the installation of the Equipment and launch experimental tests in order to verify whether the Equipment is functional and meets the technical requirements of Annexes No. 1 and 2 hereof.
- 10.3 Handover procedure includes handover of any and all technical documentation pertaining to the Equipment, user manuals and certificate of compliance of the Equipment and all its parts and accessories with approved standards.
- 10.4 The handover procedure shall be completed by handover of the Equipment confirmed by the Handover Protocol containing specifications of all performed tests. The Handover Protocol shall contain the following mandatory information:
- 10.4.1 Information about the Seller, the Buyer and any subcontractors,
  - 10.4.2 Description of the Equipment including description of all components and serial numbers,
  - 10.4.3 Description of executed acceptance tests: type of test, duration, achieved parameters,
  - 10.4.4 List of technical documentation including the manuals,
  - 10.4.5 Confirmation on training, its participants and extent,
  - 10.4.6 Eventually reservation of the Buyer regarding minor defects and unfinished work including the manner and deadline for their removal,
  - 10.4.7 Date of signature of the Equipment Handover Protocol.
- 10.5 Handover of the Equipment does not release the Seller from liability for damage caused by product defects.
- 10.6 The Buyer shall not be obliged to accept Equipment, which would show defects or unfinished work and which would otherwise not form a barrier, on their own or in connection with other defects, to using the Equipment. In this case, the Buyer shall issue a record containing the reason for his refusal to accept the Equipment.
- 10.7 Should the Buyer not exercise his right not to accept the Equipment with defects or unfinished work, the Seller and the Buyer shall list these defects or unfinished work in the Handover Protocol, including the manner and deadline for their removal. Should the Parties not be able to agree in the Handover Protocol on the deadline for removal of the defects, it shall be understood that any defects shall be removed / rectified within 14 days from the handover of the Equipment.

## **11. TECHNICAL ASSISTANCE – CONSULTATIONS**

- 11.1 The Seller shall be obliged to provide to the Buyer free-of-charge technical assistance by phone or e-mail relating to the subject-matter hereof during the entire term of the warranty period. The Seller undertakes to provide to the Buyer free-of-charge consultations and technical assistance relating to the subject-matter hereof also after the warranty period expires.



EUROPEAN UNION  
European Structural and Investment Funds  
Operational Programme Research,  
Development and Education

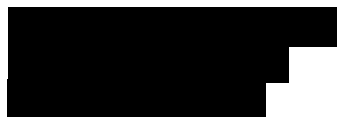


## 12. REPRESENTATIVES, NOTICES:

12.1 The Seller authorized the following representatives to communicate with the Buyer in all matters relating to the Equipment delivery:



12.2 The Buyer authorized the following representatives to communicate with the Seller:



12.3 All notifications to be made between the Parties hereunder must be made out in writing and delivered to the other Party by hand (with confirmed receipt) or by registered post (to the Buyer's or Seller's address), or in some other form of registered post or electronic delivery incorporating electronic signature (qualified certificate) to [epodatelna@fzu.cz](mailto:epodatelna@fzu.cz) in case of the Buyer and to [info.nanomax@gmail.com](mailto:info.nanomax@gmail.com) in case of the Seller.

12.4 In all technical and expert matters (discussions on the Equipment testing and demonstration, notification of the need to provide warranty or post-warranty service, technical assistance etc.) electronic communication between technical representatives of the Parties will be acceptable using e-mail addresses defined in Sections 12.1 and 12.2.

## 13. TERMINATION

13.1 The Buyer is entitled to withdraw from the Contract without any penalty from the Seller in any of the following events:

13.1.1 The Seller is in delay with the handover longer than 4 weeks after the date pursuant to Section 4.1 hereof.

13.1.2 Technical parameters or other conditions required in the technical specification defined in Annex No. 1 and 2 hereto and in the relevant valid technical standards will not be achieved by the Equipment at acceptance.

13.1.3 Facts emerge bearing evidence that the Seller will not be able to deliver the Equipment.

13.1.4 The Seller will not meet the qualification criteria within the Procurement Procedure

13.2 The Seller is entitled to withdraw from the Contract in the event of the Buyer being in default with the payment for more than 2 months with the exception of the cases when the Buyer refused invoice due to defect on the delivered Equipment or due to breach of the Contract by the Seller.

13.3 Withdrawal from the Contract becomes effective on the day the written notification to that effect is



EUROPEAN UNION  
European Structural and Investment Funds  
Operational Programme Research,  
Development and Education

  
MINISTRY OF EDUCATION,  
YOUTH AND SPORTS



delivered to the other Party. The Party which had received performance from the other Party prior to such withdrawal shall duly return such performance.

#### **14. INSURANCE**

14.1 The Seller undertakes to insure the Equipment against all risks, in the amount of the Price of the Equipment for the entire period commencing when transport of the Equipment starts until duly handed over to the Buyer. In case of breach of this obligation, the Seller shall be liable to the Buyer for any damage that may arise.

14.2 The Seller is liable for the damage that he has caused. The Seller is also liable for damage caused by third parties undertaken to carry out performance or his part under this Contract.

#### **15. WARRANTY TERMS**

15.1 The Seller shall provide warranty for the quality of the Equipment for a period of 24 months. The warranty term shall commence on the day following the date of signing of the Handover Protocol pursuant to Section 10.4 hereof. In case the Buyer accepted the Equipment with defects or unfinished work the warranty term shall commence on the day following the date of removal of the defects or unfinished work. The warranty does not cover consumable things.

15.2 Should the Buyer discover a defect, he shall notify the Seller to rectify such defect using the email address [info.nanomax@gmail.com](mailto:info.nanomax@gmail.com). The Seller is obliged to notify the Buyer without delay about any change of this email address. The Seller shall be obliged to review any warranty claim within 7 business days from receipt and to propose solution, unless agreed otherwise by the Parties.

15.3 During the warranty period the Seller shall be obliged to rectify any claimed defects within 14 business days from receipt of the Buyer's notification. In cases of unusual defects, the Seller shall be obliged to rectify the defect in the period corresponding to the nature of the defect and to define the deadline for the handover of the rectified Equipment.

15.4 During the warranty period any and all costs associated with defect rectification / repair including transport and travel expenses shall be always borne by the Seller.

15.5 The repaired Equipment shall be handed over by the Seller to the Buyer on the basis of a protocol confirming removal of the defect (hereinafter the "**Repair Protocol**") containing confirmations of both Parties that the Equipment was duly repaired and is defect-free.

15.6 The repaired portion of the Equipment shall be subject to a new warranty term in accordance with Section 15.1, which commences to run on the day following the date when the Repair Protocol was executed.

15.7 The Seller declares that he shall ensure post-warranty [out-of-warranty] service for the period of 10 years after the warranty term expires; the service terms shall be identical with provisions of Sections 15.2 and 15.3.

15.8 The Seller undertakes to provide the Buyer with updates of the software controlling the Equipment for



EUROPEAN UNION  
European Structural and Investment Funds  
Operational Programme Research,  
Development and Education



MINISTRY OF EDUCATION,  
YOUTH AND SPORTS

the entire term of warranty service.

## **16. CONTRACTUAL PENALTIES**

- 16.1 The Buyer shall be entitled to claim a contractual penalty against the Seller in the amount of 0,05 % of the Price for each commenced day of delay with the delivery pursuant to Section 4.1 hereof with a possible grace period of 10 days.
- 16.2 The Buyer shall have the right to a penalty in the amount of 0.05 % of the Price for each commenced day of delay with rectifying of claimed defects.
- 16.3 The Buyer shall be entitled to claim a contractual penalty against the Seller in the amount of 30 % of the Price, in case it will subsequently take advantage of the opportunity to withdraw from the Contract pursuant to Section 13.1.1 and 13.1.2.
- 16.4 In case of default in payment of any due receivables (monetary debt) under the Contract, the defaulting Buyer or Seller (the debtor) shall be obliged to pay a contractual penalty in the amount of 0.05 % of the owed amount for each commenced day of delay with the payment.
- 16.5 All contractual penalties shall be payable within 30 days from the date claimed.
- 16.6 Payment of the contractual penalty does not prejudice the rights of the Parties to claim damages.

## **17. DISPUTES**

- 17.1 Any and all disputes arising out of this Contract or the legal relationships connected with the Contract shall be resolved by the Parties by mutual negotiations. In the event that any dispute cannot be resolved by negotiations within sixty (60) days, the dispute shall be resolved by the competent court in the Czech Republic based on application of any of the Parties; the court having jurisdiction will be the court where the seat of the Buyer is located. Disputes shall be resolved exclusively by the law of the Czech Republic.

## **18. FINAL PROVISIONS**

- 18.1 This Contract represents the entire agreement between the Buyer and the Seller. The relationships between the Parties not regulated in this Contract shall be governed by the Act No. 89/2012 Coll., the Civil Code, as amended.
- 18.2 In the event that any of the provisions of this Contract shall later be shown or determined to be invalid, ineffective or unenforceable, then such invalidity, ineffectiveness or unenforceability shall not cause invalidity, ineffectiveness or unenforceability of the Contract as a whole. In such event the Parties undertake without undue delay to subsequently clarify any such provision or replace after mutual agreement such invalid, ineffective or unenforceable provision of the Contract by a new provision, that in the extent permitted by the laws and regulations of the Czech Republic, relates as closely as possible to the intentions of the Parties to the Contract at the time of creation hereof.
- 18.3 This Contract may be changed or supplemented solely by means of numbered amendments in writing,



EUROPEAN UNION  
European Structural and Investment Funds  
Operational Programme Research,  
Development and Education



MINISTRY OF EDUCATION,  
YOUTH AND SPORTS

furnished with the details of time and place and signed by duly authorised representatives of the Parties. The Parties expressly reject modifications to the Contract in any other manner.

- 18.4 The Parties expressly agree that the Contract as a whole, including all attachments and data on the Parties, subject-matter of the Contract, numerical designation of this Contract, the Price and the date of the Contract conclusion, will be published in accordance with Act No. 340/2015 Coll. on special conditions for the effectiveness of some contracts, publication of these contracts and Contract Register, as amended (hereinafter the “**CRA**”). The Parties hereby declare that all information contained in the Contract and its Annexes are not considered trade secrets under § 504 of the Civil Code and grant permission for their use and disclosure without setting any additional conditions.
- 18.5 The Parties agree that the Buyer shall ensure the publication of the Contract in the Contract Register in accordance with CRA.
- 18.6 This Contract becomes effective as of the day of its publication in the Contract Register.
- 18.7 The following Annexes form an integral part of the Contract:
- Annex No. 1: Technical specification on the subject of performance
- Annex No. 2: Technical description of the device as presented in Seller’s bid
- 18.8 The Parties, manifesting their consent with the entire contents of this Contract, attach their signature hereunder.

In Prague 31. 5. 2019

In Letovice 31. 5. 2019

For the Buyer:

For the Seller:

\_\_\_\_\_  
RNDr. Michael Prouza, Ph.D.  
Director

\_\_\_\_\_  
Ivo Polák  
Director



EUROPEAN UNION  
European Structural and Investment Funds  
Operational Programme Research,  
Development and Education

MINISTRY OF EDUCATION,  
YOUTH AND SPORTS

**Annex No. 1****Technical specification (minimum requirements):**

	Description and minimum specification of the Equipment as defined by the Buyer	Description and specification of the Equipment offered by the Seller	Complies YES/NO
1.	Scan range $\geq 20\mu\text{m} \times 20\mu\text{m}$	The XY scan range of the Cypher S system is $30 \times 30 \mu\text{m}$ . Please see attached brochure for published specifications	<b>YES</b>
2.	Vertical noise floor $\leq 20\text{pm}$	The vertical noise floor (DC height noise) for the Cypher S is $< 15 \text{ pm}$ average deviation measured over a 1 kHz bandwidth. Please see attached brochure for published specifications.	<b>YES</b>
3.	XY sensor noise $< 60\text{pm}$	The X and Y sensor noise for the Cypher S is $< 60 \text{ pm}$ average deviation over a 1 kHz bandwidth. Please see attached brochure for published specifications.	<b>YES</b>
4.	Z sensor noise $< 50\text{pm}$	The Z sensor noise for the Cypher S is $< 50 \text{ pm}$ average deviation over a 1 kHz bandwidth. Please see attached brochure for published specifications.	<b>YES</b>
5.	Scanning mode: sample scanning	The Cypher is a sample scanning system where scanning is carried out on the X,Y and Z axes. Please see attached brochure for published specifications.	<b>YES</b>
6.	Available SPM modes: Contact mode, tapping mode, vertical and lateral PFM, switching spectroscopy PFM, KPFM, Conductive AFM, lithography	All available modes as described will be available on the Cypher S system offered in this application. All modes except conductive AFM are available as standard on the system.	<b>YES</b>



		Conductive AFM (brand name ORCA) will be offered as an additional module in this application. Please see attached brochure for published specifications.	
7.	Fully motorized laser and detector alignment	Cantilever-laser and detector alignment is a fully motorized process on the Cypher S. Please see attached brochure for published specifications.	<b>YES</b>
8.	Crosstalk free PFM	Page 9 of the document titled "Piezoresponse-Force-Microscopy.pdf" describes in detail how Oxford Instruments Asylum Research can achieve crosstalk PFM measurements using propriety methods.	<b>YES</b>
9.	Dual-frequency tip-sample contact resonance tracking in PFM mode	Page 11 of the document titled "Piezoresponse-Force-Microscopy.pdf" describes in detail how Oxford Instruments Asylum Research uses a propriety method called DART to achieve resonance tracking in PFM mode	<b>YES</b>
10.	Acoustic enclosure/isolation	The Cypher S system includes an integrated enclosure and isolation system.	<b>YES</b>
11.	Open source control software	All software associated with the Cypher system has open source code that the user can modify with the support of Oxford Instruments Asylum Research staff.	<b>YES</b>
12.	Video system resolution better than 1 $\mu$ m	The optical video system can achieve sub-micron resolution. Please see attached brochure for published specifications.	<b>YES</b>
13.	Access to all (analog) signals (O/I breakout box)	Included with the Cypher S system as standard are 8 each input and output BCN	<b>YES</b>



		connections that allow access to all analog signals within the system.	
14.	The length of the full comprehensive warranty $\geq 2$ years	24 months	<b>YES</b>
15.	Number of Dual Lock-in Amplifiers $\geq 3$	The Cypher S system come equipped with 3 time dual phase lock-in amplifiers as standard.	<b>YES</b>

The evaluated parameters according to the evaluation sub-criterion (Evaluation of the functional performance and technical quality) are listed in this table:

Description of the Equipment as defined by the Buyer	Description and specification of the Equipment offered by the Seller
Vertical noise floor	< 15 pm
XY scan linearity	< 0.01%
Thermal drift	< 200nm/°C
Calibration of the cantilever sensitivity and spring constant without touching the tip to the sample	Included with the Cypher S system as standard is GetReal. This is a non-contact method of probe calibration that is proprietary to Oxford Instruments Asylum Research.
Possibility to control the air temperature inside the acoustic enclosure	An optional extra for this system is the ability to control the air temperature. This option can bring the thermal drift down to 20 nm/°C.
Closed-loop servo control in X, Y and Z directions	Closed loop LVDT sensors are included on all "Xx, Y and Z axes. This gives low noise closed loop control.
Multifrequency (more than 2 frequencies) mode of the SPM system (i.e. simultaneous measurement at multiple frequencies)	Included in the Cypher S system is the ability to do multifrequency techniques. More details can be found in the document "Piezoresponse-Force-Microscopy.pdf".
The length of the full comprehensive warranty $\geq 2$ years (included in the total bid price)	24 months



EUROPEAN UNION  
European Structural and Investment Funds  
Operational Programme Research,  
Development and Education

**MSMT**  
MINISTRY OF EDUCATION,  
YOUTH AND SPORTS

# Annex No. 2

**The Seller's bid in the extent it describes  
technical parameters of the Equipment**



EUROPEAN UNION  
European Structural and Investment Funds  
Operational Programme Research,  
Development and Education



# Quotation 04052019

**Supplier:** NANOMAX s.r.o.  
Novičí 76  
679 61 Letovice,  
DIČ: CZ03491366  
Contact person [REDACTED]  
e-mail: [info.nanomax@gmail.com](mailto:info.nanomax@gmail.com)



**Customer:** Fyzikální ústav AV ČR, v. v. i.,  
Na Slovance 1999/2  
Praha 8, 182 21

**Order:** Equipment for sensitive multifrequency Piezoelectric Force Microscopy (PFM) measurements

**Date:** 18th March 2019

Item no:	Description	Qty.	Price
<b>1.</b>	<b>Cypher S Standard AFM</b> System Includes: Cypher AFM microscope body/chassis assembly SpotOn motorized auto cantilever alignment Motorized approach Electronics backpack assembly Custom acoustic enclosure View Module; sample and cantilever viewing package with diffraction limited performance, LED based Kohler illumination and 3.1 megapixel CMOS camera Standard "S" scanner and approach module with gas/air cantilever holder ARC2 all digital control system Minimum Computer Specs: Dell Precision T5810 Workstation (manual), Microsoft Windows 10 Professional 64bit, 3.5GHz Intel Four Core Haswell Xeon, 8GB DDR4  RAM, Two 2TB SATA Hard Drives (RAID1 mirror), 8x DVD-ROM, AMD Radeon RX-470 4GB video card, Two 24" LCD Screens (1920x1200), 6 USB 2.0 ports, 4 USB 3.0 ports, 2 FireWire ports IGOR Pro 6 - Acquisition and Control & ARgyle – Analysis and Image processing software package, on-line help and manual Sample package of assorted Cantilevers/Probes. Includes 10 AC240TS-R3, 10 TR400PB, 10 TR800PB and (new) HQ probe variety pack - 5 each; 300, 300-Au, 150-Au, 75-Au, 13-Au  Misc. Accessories: Tweezers, calibration grating, ear phones, power strip and all necessary cords and cables for operation of the AFM	<b>1</b>	[REDACTED]
<b>2.</b>	<b>Laser diode assembly sandard</b>	<b>1</b>	[REDACTED]



Item no:	Description	Qty.	Price
<b>3.</b>	<b>ORCA Conductive AFM Cantilever Holder Kit for Cypher S</b>	<b>1</b>	
<p>ORCA Conductive AFM (C-AFM) Cantilever Holder Kit for Cypher.  Provides current imaging and I/V spectroscopy capabilities at user selectable voltages and points.  Includes:  · ORCA Cantilever holder with integral pre-amp. Standard gain is 5e8, (2nA/v), (~1pA to 20nA)  · Custom gains available upon request  · Conductive sample holder mount with sample bias contact  · 10 ASYELEC-01 Asylum Research conductive AFM probes  · Misc. accessories: silver paint, tools and accessories</p>			
<b>4.</b>	<b>One day of AFM Training</b>	<b>3</b>	
<p>Three Consecutive Days of AFM Training at the Customer's Site. Training is done by one of Asylum Research's staff scientists. Training topics covered include general instrument training as well as specific applications. Custom applications require advanced notice and approval. Installation is not included and must be purchased separately. This price is only for consecutive days. It may not be split up into separate visits.</p>			
Total:			<b>7 200 000,-Kč</b>
<p>All prices excluding VAT.</p>			
<p>Sincerely  Ivo Polák  Nanomax s.r.o  director</p> 