Purchase Contract

(hereafter the “**Contract”**)

1. **CONTRACTUAL PARTIES**
   1. **Fyzikální ústav AV ČR, v. v. i.**,

with offices: Na Slovance 1999/2, 182 21 Praha 8,

represented by: Prof. Jan Řídký, DrSc. – Director,

Registered in the register of public research institutions of the Ministry of Education, Youth and Sports of the Czech Republic.

Bank: UniCredit Bank Czech Republic and Slovakia, a.s.

Account No.: 2106535627/2700

ID No.: 68378271

Tax ID No.: CZ68378271

(hereinafter the "**Buyer**")

and

* 1. **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_,**

with seat: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_,

represented by: \_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_\_,

registered in \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Bank: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Account No.: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_/\_\_\_\_\_\_

ID No.: \_\_\_\_\_\_\_\_\_\_\_\_

Tax ID No.: \_\_\_\_\_\_\_\_\_\_\_\_ (TO BE FILLED IN BY THE SELLER)

(hereinafter the "**Seller**"),

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

1. **FUNDAMENTAL PROVISIONS**
   1. The Buyer is a public research institution whose primary activity is scientific research in the area of physics, especially elementary particles physics, condensed systems, plasma and optics.
   2. The Buyer wishes to acquire the subject of performance hereof (**Universal cryogenic apparatus for measuring of physical properties in the magnetic fields**) in order to measure basic physical properties of solids, in particular fast and accurate characterization of magnetic, thermal and electrical properties over a wide range of conditions, namely temperature and magnetic field.
   3. The Seller was selected as the winner of a public procurement procedure announced by the Buyer in accordance with Act No. 137/2006 Coll., on Public Procurement, as amended (hereinafter the “**Act**”), for the public contract called “**Universal cryogenic apparatus for measuring of physical properties in the magnetic fields**”(hereinafter the “**Procurement Procedure**”).
   4. The documentation necessary for the execution of the subject of performance hereof consist of
      1. Technical specifications of the subject of performance hereof attached as **Annex No. 1** hereto**.**
      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 form **Annex No. 2** to this Contract and 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.

* 1. The Seller declares that it 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 the Seller from supplying the subject of this Contract to the Buyer.
  2. The Seller acknowledges that the Buyer considers the Seller’s participation in the Procedure, provided that the Seller complies with all qualification requirements, as the confirmation of the fact that the Seller is capable, within the meaning of Sec 5(1) of the Act No. 89/2012 Coll., the Civil Code, as amended (hereinafter the “**Civil Code**”) 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 its qualities as the expert or its economic position 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.
  3. 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.
  4. 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 handover and invoicing) is essential for the Buyer. If the Seller fails to meet contractual requirements, it may incur damage of the Buyer.
  5. The Seller declares that he accepts the “risk of changed circumstances” within the meaning of Sec 1765(2) of the Civil Code.
  6. The Contractual 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.

1. **SUBJECT-MATTER OF THE CONTRACT** 
   1. The subject of this Contract is the obligation on the part of the Seller to handover and transfer into the Buyer’s ownership:

the **Universal cryogenic apparatus for measuring of physical properties in the magnetic fields** (hereafter the “**Equipment**”)

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

* 1. The following activities form an integral part of the performance to be provided by the Seller:
     1. Transport of the Equipment incl. all accessories specified in Annexes 1 and 2 of the Contract to the site, un-packaging and control thereof,
     2. Installation of the Equipment including connection to installation infrastructure at the site,
     3. Verification of the Equipment’s proper functionality and adjustment at the site,
     4. Delivery of instructions and operating and repair manuals Equipment in Czech or English language to the Buyer, in electronic and hardcopy (printed) versions,
     5. Training of operators at the site,
     6. Free-of-charge warranty service including service inspections,
     7. Provision of technical support in the form of consultations.
  2. The subject of performance (Equipment) is specified in detail in Annexes No. 1 and No. 2 hereto.
  3. 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 more strict standard or its part shall always apply.
  4. The delivered Equipment and all its parts, accessories must be brand new and unused.

1. **PERFORMANCE PERIOD**
   1. The Seller undertakes to handover the Equipment properly after the initial installation, demonstrating its functionality and operator training within 8 months of the conclusion hereof, but no later than 30. 11. 2016.
   2. The Seller shall notify the Buyer about the term of the delivery and installation of the Equipment min. 10 working days in advance.
   3. The Buyer acknowledges that the Seller shall pay the price from public financial support with the possibility of drawing bill by the end of 2016; for this reason, the Buyer is not interested in performance of a later date than laid down in Section 4.1 hereof.
   4. 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.
2. **PREPAREDNESS OF THE PLACE OF HANDOVER**
   1. The Seller undertakes to perform a visit of the place of handover (installation) of the Equipment and verify that the site meets all the requirements necessary for installation (room dimensions, requirements for electrical outlet, room temperature, vibration, etc.) within 30 days of the conclusion hereof. The conditions required by the Seller shall not deviate from usual terms for installation of similar scientific equipment.
3. **PURCHASE PRICE, INVOICING, PAYMENTS** 
   1. The purchase price is based on the Seller’s submitted bid and amount to \_\_\_\_\_\_\_\_ CZK (in words: \_\_\_\_\_\_\_\_\_\_\_) (TO BE FILLED IN BY THE SELLER) excluding VAT (hereinafter the **“Price”**). VAT shall be paid by the Buyer and settled in accordance with the valid Czech regulation.
   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 creation and its protection.
   3. The Parties agreed that the Seller shall be entitled to invoice the Price as follows:
      1. The advance payment corresponding to 30 % of the total Price in the amount of \_\_\_\_\_\_\_\_\_ CZK excl. VAT (TO BE FILLED IN BY THE SELLER) after the conclusion hereof.
      2. The Price will be invoiced after the handover protocol in accordance with Section 10.5 will have been signed between the Parties. The Handover protocol shall be attached to this invoice. This invoice shall be issued and delivered to the Buyer on the day of signing of the Handover protocol.
      3. In case the Buyer accepted the Equipment with any minor defect or unfinished work, the Seller shall be entitled to invoice up to 85 % of the total Price in the amount of \_\_\_\_\_\_\_\_\_ CZK excl. VAT (TO BE FILLED IN BY THE SELLER) after handover protocol in accordance with Section 10.5 will have been signed between the Parties. The remainder of the Price shall the Seller be entitled to invoice after removal / remedy of minor defects or unfinished work. The Handover protocol or the Buyer's confirmation of removal of minor defects or unfinished work shall be attached to these invoices.
   4. Invoices issued by the Seller hereunder shall contain all the requirements stipulated by Act no. 235/2004 Coll., on Value Added Tax, as amended, and the Contract number.
   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 treaties prohibiting double taxation, if applicable.
   6. Invoices shall be payable within thirty (30) days of the date of their delivery to the Buyer (hereinafter the **"Maturity Period"**). Payment of the invoiced amount means the date of its remittance to the Seller’s account.
   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.
   8. The Buyer shall be entitled to unilaterally set off against any receivables claimed by the Seller any of its payment due to:
      1. damages caused by the Seller,
      2. contractual penalties and other sanctions.
   9. The Seller shall not be entitled to set off any of its receivables against any part of the Buyer’s receivable hereunder.
4. **OWNERSHIP TITLE**
   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.
5. **PLACE OF DELIVERY AND HANDOVER OF THE EQUIPMENT**
   1. The place of delivery and handover of the Equipment shall be the premises of the Department 24 of the Fyzikální ústav AV ČR, v.v.i. at Cukrovarnická 112/10, Praha 6, Building A, room No. A33/1
6. **COOPERATION OF THE PARTIES**
   1. The Seller undertakes to notify the Buyer of any obstacles on its part, which may negatively influence proper and timely delivery and handover of the Equipment.
   2. The Buyer undertakes to ensure such conditions that in the period between the delivery of the Equipment and begin of the installation no damage will incur to the Equipment.
   3. The Seller shall notify the Buyer of improper preparedness of the place of handover (installation) within 14 days of execution of the visit pursuant to Section 5.1 hereof.
   4. The Parties wish to deviate from provisions of Section 2126 of the Civil Code and agree that the Seller shall not be authorized to use institutes established therein.
7. **DELIVERY, INSTALLATION, HANDOVER AND ACCEPTANCE**
   1. The Seller shall transport the Equipment at its own cost to the place of handover. If the shipment is intact, the Buyer shall issue delivery note for the Seller.
   2. The Seller shall begin with the installation of the Equipment within 14 calendar days from the date of delivery.
   3. The Seller shall perform and document the installation of the Equipment and launch experimental test in order to verify whether the Equipment is functional and meets the technical requirements of Annexes No. 1 and 2 hereof.
   4. 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.
   5. The handover procedure shall be completed by handover of the Equipment confirmed by the handover protocol containing specifications of all performed tests (hereinafter the “**Handover protocol“**). The Handover protocol shall contain the following mandatory information:
      1. Information about the Seller, the Buyer and any subcontractors,
      2. Description of the Equipment including description of all components and serial numbers,
      3. Description of performed tests including achieved parameters,
      4. Confirmation of conducted training of operators,
      5. List of technical documentation including the manuals,
      6. Eventually reservation of the Buyer regarding minor defects and unfinished work including the manner and deadline for their removal,
      7. Date of signature of the Equipment Handover protocol.
   6. Handover of the Equipment does not release the Seller from liability for damage caused by product defects.
   7. The Buyer shall not be obliged to accept the 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 its refusal to accept the Equipment.
   8. Should the Buyer not exercise its 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 48 hours from the handover and acceptance of the Equipment.
8. **TECHNICAL ASSISTANCE - CONSULTATIONS**
   1. The Seller shall be obliged to provide to the Buyer free-of-charge consultations and technical assistance relating to the subject of performance hereof during the entire term of the warranty period. The Seller undertakes to provide to the Buyer consultations and technical assistance relating to the subject of performance hereof also after the warranty period expires.
9. **REPRESENTATIVES, NOTICES:**
   1. The Seller authorized the following representatives to communicate with the Buyer in all matters relating to the Equipment delivery:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

e-mail: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

tel. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (TO BE FILLED IN BY THE SELLER)

* 1. The Buyer authorized the following representatives to communicate with the Seller:

RNDr. Jiří Kaštil, Ph.D.

[kastil@fzu.cz](mailto:kastil@fzu.cz)

tel. (+420) 220 318 521

* 1. 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 …….@...... (TO BE FILLED IN BY THE SELLER) in case of the Seller.
  2. In all technical and expert matters (discussions on the Equipment testing and demonstration, notification of the need to provide warranty or post-warranty service etc.) electronic communication between technical representatives of the Parties will be acceptable using e-mail addresses defined in Sections 12.1 and 12.2.

1. **TERMINATION**
   1. This Contract may be terminated early by agreement of the Parties or withdrawal from the Contract on the grounds stipulated by law or in the Contract.
   2. The Buyer is entitled to withdraw from the Contract without any penalty from Seller in any of the following events:
      1. The Seller fails to meet the deadline pursuant to Section 4.1 hereof.
      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 handover,
      3. Facts emerge bearing evidence that the Seller will not be able to deliver and handover the Equipment.
      4. The Seller will not meet the qualification criteria within the Procurement Procedure.
   3. 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.
   4. Withdrawal from the Contract becomes effective on the day the written notification to that effect is delivered to the other Party. The Party which had received performance from the other Party prior to such withdrawal shall duly return such performance.
2. **INSURANCE**
   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.
3. **WARRANTY TERMS**
   1. The Seller shall provide warranty for the quality of the Equipment for a period of ...... months (TO BE FILLED IN BY THE SELLER). The warranty term shall commence on the day following the date of signing of the confirmation of removal of minor defects or unfinished work or on the day following the date of signing of the Handover Protocol pursuant to Section 10.5 hereof in case the Equipment was handed over without any minor defects or unfinished work. The warranty does not cover consumable things.
   2. The Seller undertakes to provide free-of-charge service and regular service inspections in the extent defined by the manufacturer for the entire warranty term hereunder including repairs, supply of spare parts and transport and costs associated with employing a service technician.
   3. Should the Buyer discover a defect, he shall notify the Seller to rectify such defect using the email address …….@...... (TO BE FILLED IN BY THE SELLER). The Seller shall be obliged to respond to the notice of defect within 24 hours from notification and to send a technician for its remedy within 5 working days from notification.
   4. The Seller shall be obliged to rectify any claimed defects on-site within 14 working 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.
   5. Any and all costs associated with defect rectification / repair including transport and travel expenses shall be always borne by the Seller.
   6. 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.
   7. 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.
   8. Should the Equipment suffer from defects which make it demonstrably unusable for a period exceeding 40 days (defect period) during any six (or less) consecutive months during the warranty term, the Seller shall be obliged to rectify such defect by delivering new defect-free Equipment in accordance with Section 2106(1)(a) of the Civil Code within 8 months from the date the Seller was called upon to deliver the new Equipment. The Equipment is demonstrably unusable, when the 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 are not met.
4. **CONTRACTUAL PENALTIES**
   1. The Buyer shall be entitled to claim a contractual penalty against the Seller in the amount of 30 % of the Price, in case he will subsequently take advantage of the opportunity to withdraw from the Contract pursuant to Section 13.2.1 and 13.2.2.
   2. The Buyer shall have the right to a penalty in the amount of 15.000,- CZK for each day when the Equipment was inoperational due to defect that was subject to warranty repairs, starting on the 15th day from notification of the defect. In cases of unusual defects, the penalty of 15.000,- CZK will be applied for each commenced day following the date of deadline for the handover of the rectified Equipment, specified in Section 15.4 hereof.
   3. The Buyer shall have the right to a penalty in the amount of 10.000,- CZK for each commenced day of delay with beginning the installation of the Equipment pursuant to Section 10.2 hereof.
   4. In case the Seller delivers the duly issued invoice pursuant to Section 6.3.2 hereof after 5. 12. 2016, the Buyer shall have the right to a penalty in the amount of 100.000,- CZK.
   5. 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 0.01 % of the owed amount for each commenced day of delay with the payment of the Price.
   6. Contractual penalties are payable within 30 days of notification demanding payment thereof.
   7. Payment of the contractual penalty does not prejudice the rights of the Parties to claim damages; The Parties exclude use of Sec 2050 of the Civil Code.
5. **DISPUTES**
   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.
6. **FINAL PROVISIONS**
   1. After delivery and handover of the Equipment hereunder the Seller shall provide to the Buyer a list of any subcontractors who received more than 10% of the Price for their performance hereunder pursuant to Section 147a of the Act.
   2. 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 Civil Code.
   3. 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.
   4. This Contract becomes valid and effective as of the day of its conclusion by the authorised persons of both Parties.
   5. This Contract may be changed or supplemented solely by means of numbered amendments in writing, furnished with the details of time and place and signed by duly authorised representatives of the Parties. The Parties expressly reject, within the bounds of Sec 564 of the Civil Code, modifications to the Contract in any other manner.
   6. This Contract is drawn up in three (3) counterparts, each of which is deemed to be the original. The Seller shall receive two (2) counterparts, the Buyer shall receive one (1) counterpart.
   7. The following Annexes form an integral part of the Contract:

Annex No. 1: Buyer’s technical specification of the Equipment (presented by the Buyer)

Annex No. 2: Seller’s technical specification

1. Technical specification on the subject of performance (in the first table the Seller shall fill in the columns "Description and specifications of the offered Equipment" and "Meets YES / NO"; in the second table the Seller shall complete data to the evaluation sub-criterion „Technical merit of the performance offered“)
2. Seller’s bid in respect of part which technically describes the device (the Seller shall present in its bid)

Annex No. 3: List of subcontractors who will receive more than 10% of the Price (the Seller shall present in its bid)

* 1. The Parties, manifesting their consent with the entire contents of this Contract, attach their signature hereunder.

In Prague on \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

For the Buyer: Fyzikální ústav AV ČR, v. v. i.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

prof. Jan Řídký, DrSc.

Director

In \_\_\_\_\_\_\_\_\_\_ on \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

For the Seller: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_ (TO BE FILLED IN BY THE SELLER)

**Annex No. 1 – Buyer’s technical specification of the Equipment**

The purpose of the contract is the purchase of modular laboratory measuring apparatus enabling fast and accurate measurements of physical properties of solid substances in a wide range of temperatures (minimum and essential range of temperatures is from 350 K down to 2 K + extension to low temperature of 0.4 K for selected measurements) and magnetic fields (minimum range of magnetic fields is from 0 to 14 Teslas) The important is the temperature stability (better than 0.25% at maximum field) and magnetic field homogeneity at the sample position (supposed better than 0.25% / cm in all field ranges).

The apparatus must allow measurements, in particular, of **heat capacity**, **electrical resistance and electric DC voltage** on the sample powered by the electric current (possibly an AC method, too) in the temperature range from 0.4 K to 350 K and the external mg. field from 0 to 14 T. In addition this universal measuring device must enable accurate measurement of the magnetic response material in the form of: (i) **alternating magnetic susceptibility** in the acoustic frequency range (in the temperature range 2 K- 350 K with a frequency range of an alternating magnetic field tuneable at least by 3 orders of magnitude) and (ii) **DC magnetization** in the temperature range 2 K-350 K and an external field from 0 to 14 T. The heat transport properties of the samples - **thermal conductivity** and **thermoelectric coefficient** (also sometimes referred to as the Seebeck effect) - must be measurable in the temperature range of at least from 2 K up to 350 K and the magnetic field from 0 to 14 T.

The design of the instrument should be sufficiently flexible in the sense that it allows both easy and rapid replacement of the sample and the implementation of other experimental characterization in a given range of temperatures and magnetic fields that are not explicitly listed above. The requirement of realization of custom designed experimental characterization methods is linked with the requirement of connecting of own measuring instruments and their programming via bus communication devices; namely the software of the device must provide the ability to connect additional measuring instruments via GPIB interface (or equivalent). Modular measuring instrument should allow a maximum degree of automation.

Due to the nature of the instrument one assumes the use of liquid helium (He) for cooling and generating a magnetic field. It is therefore necessary, in the context of maximizing economy of operation, to optimize the thermal shield of the cryostat, whilst simultaneously ensuring the possibility of recovery of evaporated He, therefore, the possibility of connecting the measuring device to an existing system of He recuperation in the Institute of Physics. Evaporation of liquid He should be minimized via sufficient thermal insulation and the use of a liquid nitrogen shield. The measuring equipment should allow the installation and operation in a standard laboratory (meaning temperature and humidity) using existing power lines that meet applicable standards.

Detailed specifications given in Annex No. 2 a).

**Annex No. 2 a) – Technical specification on the subject of performance**

Tab. 1: Description and specifications of the offered Equipment:

The subject of performance in accordance with Sec 46(4) of the Act includes the following components and meets the technical requirements:

|  |  |  |
| --- | --- | --- |
| Description and minimum specification of the Goods as defined by the Buyer | Description and specification of the Equipment offered by the Seller | Complies YES/NO |
| **Measuring of AC magnetic susceptibility**  Temperature range 2-350 K  Sensitivity 10-7 emu, frequency range tuneable at least of 3 orders within the frequency range 10-1-104 Hz | ………… | ………… |
| **Measuring of DC magnetization**  Temperature range 2-350 K  Sensitivity at least 10-6 emu, Applied magnetic field between 0-14 T | ………… | ………… |
| **Measuring of specific heat**  Temperature range at least 0.4 – 350 K  Applied magnetic field between 0-14 T  Sensitivity at least 20 nJ/K at temperatures below liquid He, Possibility of individual programming of heating power and individual evaluation of acquired raw data. | ………… | ………… |
| **Measuring of electrical resistivity and electric voltage** Temperature range at least 0.4 – 350 K,  Applied magnetic field between 0-14 T  Range of measurable resistivity: 1 m1 M Minimum sensitivity of electric voltage detection: ~50 nV | ………… | ………… |
| **Measuring of thermal conductivity **  Temperature range at least 0.4 – 350 K,  Applied magnetic field between 0-14 T  Absolute range of measurement at ambient temperature within roughly 100-101 Wm-1K-1 for “standard” sample size corresponding to 10x2 x 2 mm,  Dynamic range at least 20 in all temperature range,  Measurement error better than 10% considering the dynamic factor, temperature detection sensitivity and radiation, i.e. reflecting the difficulties associated with measurement of extremely insulating and conducting materials (for **** at ambient temperature 0.25 Wm-1K-1 or **** 250 Wm-1K-1), respectively. | ………… | ………… |
| **Measuring of thermoelectric power S**  Temperature range at least 0.4 – 350 K,  Applied magnetic field between 0-14 T  Sensitivity of thermoelectric voltage detection significantly better than 5 V,  Range of the measured thermoelectric voltages from ~ 100 V up to ~ 103 VK-1  Measurement error better than 10 % in all temperature range for absolute value S within the range 101-103 VK-1 (For small absolute values of |S|< 10VK-1 is the error of thermoelectric power measurement associated with sensitivity of the thermo-voltage detection and the criterion of maximum error below 10% is not valid) | ………… | ………… |

**Bidders shall provide in their bid an unambiguous statement to all the above points of the technical specification, which will clearly indicate whether the offered equipment complies (or exceeds) the required parameters, or in which manner the offered equipment ensures the required functionality.**

Tab. 2

|  |  |
| --- | --- |
| **Table of the evaluation sub-criterion „Technical merit of the performance offered“** | |
| Description | Value |
| Homogeneity of the magnetic field within 5 cm around the sample centre | ………… |
| Residual field strength of the magnet at the position of the sample | ………… |

**Bidders shall complete numeric values (including units).**

**Annex No. 2 b) – The Seller’s bid in the extent it describes technical parameters of the Equipment**

To be provided by the Seller / Bidder

**Annex No. 3 -** list of subcontractors who will receive more than 10% of the Price

***Variant 1:***

|  |  |  |  |
| --- | --- | --- | --- |
| **No.** | Name, seat, ID/Tax ID, tel./fax, e-mail, Commercial Registry registration details, authorized person | Definition of that part which the Seller shall provide via the subcontractor | % share on the performance |
| **1** |  |  |  |
| **2** |  |  |  |
| **3** |  |  |  |

***Variant 2:***

No subcontractors will be used to perform the subject of performance hereof, no subcontractors will receive more than 10% of the Price for the performance provided hereunder.