##### **PARTIES**

**Purchase Contract**

**Vysoká škola chemicko-technologická v Praze (University of Chemistry and Technology Prague)** with the registered oﬃce at: Technická 5, Prague 6 – Dejvice, post code 160 00, Czech Republic represented by: xxxxx, rector

IN: 60461373 TIN: CZ60461373

Bank: xxxxx; account number: xxxxx

*(hereinafter “Purchaser”)*

*and*

**Novocontrol Technologies GmbH & Co. KG**

with the registered oﬃce at Aubachstraße 1, 56410 Montabaur, Germany

incorporated in the Commercial Register kept by the Amtsgericht (Court) in Montabaur, HRA 4443 represented by xxxxx, Director Sales & Support

ID: DE234102753 (VAT-ID)

TIN: 30/202/0841/6 (Tax-ID)

Bank: xxxxx

Address: xxxxx xxxxx

Account number kept with tax administrator: xxxxx IBAN xxxxx

*(hereinafter “Seller”)*

*The Purchaser and the Seller hereinafter collectively as “Parties” or individually as “Party”)*

*conclude this Purchase Contract (hereinafter “Contract”) on this day, month and year*

##### RECITALS

* 1. The Seller acknowledges that the Purchaser considers Seller´s participation in a public contract and the fact it has fulﬁlled qualiﬁcation requirements as a conﬁrmation that, the Seller is able to act with knowledge and care within the performance of this Contract, which is associated with its occupation or profession. Should the Seller fail to act with professional care, it shall bear the resulting consequences. The Seller may not abuse its professional quality, nor its economic position to create or exploit the dependance of the weaker party and to achieve a clear and unjustiﬁed imbalance between mutual rights and obligations of the Parties.
  2. The Seller acknowledges that the Purchaser is not an entrepreneur in relation to this Contract and that the subject-matter hereof is not part of Purchaser´s business activity.
  3. The Seller has been awarded a contract within the procurement procedure announced by the Purchaser under Act No. 134/2016 Coll., on Public procurement, for a public contract named “PROLAB\_Dielectric Spectrometer” (hereinafter “Procurement Procedure”).
  4. The following documents also serve as basic materials for delivery of the subject-matter of the performance hereunder:

Conditions for participation in the Procurement Procedure;

Technical Speciﬁcation of Performance according to the Procurement documentation and Seller

´s tender which is attached as Annex No. 1 hereto (hereinafter “Technical Speciﬁcation of Performance”) and is an integral part hereof;

The Seller´s tender submitted within the Procurement Procedure providing technical information on the subject-matter of performance (hereinafter “Tender”).

* 1. The Seller declares it meets all the professional prerequisites necessary for the delivery of the subject-matter of performance under the Contract, is entitled to execute / deliver the performance and there are no impediments on the Seller´s part preventing it from delivering the subject-matter of this Contract to the Purchaser.
  2. The Parties declare they shall maintain in conﬁdentiality all facts learned in connection with this Contract and its performance, the disclosure of which could result in harm incurred by the Parties. This provision is without prejudice to the Purchaser´s obligations arising from legal regulations.
  3. The Seller acknowledges that the subject-matter of performance hereunder is a part of the project „Infrastruktura pro laboratorní výuku na VŠCHT Praha (PROLAB)”, reg. no.: CZ.02.02.01/00/23\_023/0008613, co-ﬁnanced from EU resources within operational programme Johannes Amos Comenius, call Excellent Research.

##### Subject-Matter of Contract

* 1. The subject-matter hereof is the Seller´s obligation to deliver and transfer the ownership right to the device speciﬁed in the Technical Speciﬁcation of Performance, attached as Annex No. 1 hereto, to the Purchaser.

(the device mentioned in paragraph 3.1 hereinafter as “device” or “goods”).

* 1. Within the performance the Seller shall also:
     1. transport the device to the place of performance, unpack and inspection it,
     2. connect the device to the distribution network in the place of performance including commissioning and calibration,
     3. demonstrate its operability and verify parameters required by the Purchaser. This veriﬁcation shall be a part of the installation and handover protocol.
     4. process and hand over instructions and manuals to the Purchaser for the operation and maintenance of devices in the Czech or English language, electronically or in printed form,
     5. train operators of the device in the Czech or English language immediately after installation,
     6. submit a declaration of conformity of the delivered device with the approved standards,
     7. grant authorization to exercise the right to use software (license) where it is necessary for the proper use of the subject-matter of performance, or if the Seller requires so under this Contract,
     8. prepare a list of items delivered for inspection purposes,
     9. provide cooperation to the Purchaser during delivery, consisting, *inter alia*, in verifying whether the premises are prepared for the installation of the device,

(The device under paragraph 3.1 and the performance under paragraph 3.2 of this Article hereof hereinafter also as “delivery”).

* 1. The Purchaser undertakes to take over the duly and timely delivered device, and to pay the Seller the purchase price speciﬁed in Article 5 of this Contract for them.
  2. In the event that proper performance and operation of the device requires further deliveries and works not expressly listed herein in order to meet the Purchaser´s requirements arising from this Contract including its Annexes, the Seller agrees and commits to secure or make these deliveries and secure or perform the required works at its expense and include them in the performance without adjusting the purchase price hereunder.
  3. Under the conditions set out in this Contract, the Seller undertakes to deliver the device to the Purchaser to the place of performance at its own expense and responsibility and to hand it over and to perform the services and works speciﬁed in paragraphs 3.1 and 3.2 of this Article hereof. The Seller shall ensure that the device and services comply with this Contract, including the Annexes, Tender, applicable legal, technical and quality standards, and that the device has a CE certiﬁcation.

##### Ownership Right

* 1. Ownership right passes to the Purchaser upon takeover of the device. Takeover means the signing of a protocol on the handover and takeover of the device by both Parties. The risk of damage to the device passes onto the Purchaser upon signature of the mentioned protocol.

##### Purchase Price and Terms of Payment

* 1. The purchase price for the subject-matter of the Contract referred to in Article 3 paragraph 3.1. and 3.2. was determined on the basis of the Tender as a maximum and not-to-exceed price, in the amount of net EUR 144567.- without VAT (hereinafter referred to as the “purchase price”), plus 21% VAT, if applicable, in the amount of EUR [ADD], i.e. a total of EUR [ADD] incl. VAT.
  2. The purchase price includes all costs associated with the performance of the subject-matter of this Contract, including the cost of insurance of the device until its delivery according to the agreed Incoterm. The purchase price is not aﬀected by price developments and exchange rate changes.
  3. The purchase price is the highest permissible price for the subject-matter of performance. The purchase price may be changed only by a written amendment hereto, and solely when:

VAT rate changes after the conclusion of the Contract and before the handover and takeover date (only change of VAT is permitted).

* 1. The Purchaser commits to pay the purchase price to the Seller as follows:

100 % of the purchase price shall be paid based on the invoice issued following handover and takeover of the device, which shall be recorded in a handover protocol drafted by the Parties in accordance herewith.

The maturity period of invoices, except for the pro forma invoice, shall always be 30 days from the date of delivery thereof to the Purchaser. The charged amount is deemed paid when the relevant sum is sent to the Seller´s account. Tax documents - invoices issued by the Seller under this Contract shall, in accordance with the relevant legal regulations of the Czech Republic, contain in particular the following data:

1. company/business name and registered oﬃce of the Purchaser
2. tax identiﬁcation number of the Purchaser
3. company/business name and registered oﬃce of the Seller
4. tax identiﬁcation number of the Seller
5. tax document registration number
6. scope and subject-matter of performance,
7. date of issue of tax document,
8. date of taxable supply or date of receipt of payment, whichever is earlier, if these dates do not correspond with the date of issue of tax document

(xviii) project number CZ.02.02.01/00/23\_023/0008613,

1. price of the goods.
   1. If the tax document - invoice is not issued in accordance with the terms of payment set out in the Contract or fails to meet the required legal requirements or is not delivered to the Purchaser by the deadline speciﬁed above, the Purchaser is entitled to return the tax document – invoice to the Seller as incomplete, or incorrectly issued, to correct it or issue a new tax document - invoice within 5 working days from the date of its delivery to the Purchaser. In such a case, the Purchaser is not in delay with the payment of the purchase price or a part thereof and the Seller shall issue a corrected invoice with a new, identical maturity period, beginning on the day of delivery of the corrected or newly issued tax document - invoice to the Purchaser.
   2. Purchaser´s invoicing data are listed in Article 1 hereof.
   3. The Seller is obliged to send the electronic version of the invoice to the Purchaser to email xxxxx in pdf. format.
   4. If applicable, the Seller declares it speciﬁed its bank account in Article 1, which is published in the Register of Payers. This provision shall not apply to persons who are not obliged to submit an application for registration under the VAT Act.

##### Performance Dates

* 1. The Seller undertakes to duly produce, procure, deliver, test, install, hand over to the Purchaser and demonstrate the functionality of the device referred to in Article 3, paragraph 3.1 of this Contract within 3 months from the date the Contract enters into eﬀect.
  2. The Purchaser undertakes to take over the duly delivered, tested, installed device on the agreed date, whose functionality was demonstrated to the Purchaser by the Seller in accordance with this Contract. The Parties shall draft a handover and takeover protocol, as stated below.

##### Place of Performance

* 1. Department of Physical Chemistry, University of Chemistry and Technology, Prague is the place of performance (hereinafter “place of performance”).

##### Handover and Takeover of Premises for Installation

* 1. The Seller is obliged to inform the Purchaser in writing about the exact date for installation and demonstration of the device, at least 5 working days in advance so that the deadline speciﬁed in Article 6, paragraph 6.1 of the Contract is maintained.
  2. After the expiry of the period pursuant to paragraph 8.1 of this Article of the Contract, the Purchaser is obliged to allow the Seller to install and demonstrate the device in the installation premises. The Parties shall draw up a protocol documenting handover and takeover of installation premises.
  3. The Seller is obliged to invite the Purchaser in good me before the date of installation and demonstration of the device to inspect the installation premises and check points for connection of the device to distribution of electricity, heat, etc. in good time, and remedy any deﬁciencies preventing installation and demonstration of devices on the date referred to in Article 6 (6.1).
  4. The Parties agree that the Seller is not entitled to exercise the right of sale by self-help by way of derogation from Section 2126 of the Civil Code.

##### Further Terms of Delivery

* 1. When making the delivery, the Seller proceeds independently, but undertakes to respect the Purchaser´s instructions regarding the implementation of the subject-matter of performance hereunder.
  2. The Seller is obliged to notify the Purchaser without undue delay if items taken over from the Purchaser or the instructions given to the Seller by the Purchaser concerning the delivery are unsuitable, if the Seller was able to detect such unsuitability when exercising professional care.
  3. Unless otherwise stipulated in the Contract, the Seller is obliged to provide all items necessary for the performance under this Contract.
  4. The Seller is obliged to deliver completely new, fully functional goods (including any SW) to the Purchaser, in quality and technical design corresponding to valid European Union regulations and corresponding requirements set by EU legislation, applicable to the goods.
  5. The Seller declares that the goods delivered by virtue of this Contract fully comply with the conditions set out in the procurement documents used in the procurement procedure where Seller´s tender was selected as the most suitable.
  6. The Seller undertakes to ensure that the goods shall not be encumbered by any third-party rights, in particular no pre-emption right, pledge or right of lease, as of the moment the ownership right to the goods is transferred.
  7. With regard to the Purchaser´s obligations arising in particular from Act No. 134/2016 Coll., on public procurement, the Seller agrees to the publication of all information concerning the contractual relationship established between the Seller and the Purchaser herein, in particular the content of this Contract.

##### Installation, Commissioning, Demonstration of Operation and Handover and Takeover of Device

* 1. Handover and takeover of the device hereunder includes its installation in the installation premises, conﬁguration in the place of performance and veriﬁcation of correct functionality with the participation of representatives of the Purchaser and Seller.
  2. With the participation of the Purchaser´s representatives, the Seller shall further verify that the device meets the parameters speciﬁed by the manufacturer and required by the Purchaser in the Technical Speciﬁcation of Performance and this Contract, by demonstrating the operation of the device after its proper commissioning according to the manufacturer´s instructions applicable to the given device and after calibration and veriﬁcation of correct functionality by the Seller. Flawless demonstration is required for acceptance of the device by the Purchaser.
  3. Within handover, the Seller shall submit the following to the Purchaser:

1. a list of items delivered,
2. operating and maintenance instructions, conditions for maintenance and protection of the device in Czech or English, and all necessary documents or accessories related to the device.
   1. If the Seller fails to submit all the above documents to the Purchaser, the subject-matter of performance hereunder shall not be deemed properly ﬁnished and ﬁt for handover.
   2. The Parties shall draw up a handover protocol documenting handover and takeover which shall contain the following mandatory information:
3. Purchaser´s and Seller´s data
4. description of the device which is the subject-matter of handover and takeover, including the serial / production number of the device,
5. warranty period start date,
6. a declaration of the Seller conﬁrming that the device is in compliance with valid legal regulations, technical standards and in accordance with the Technical Speciﬁcation of Performance and the business terms and conditions laid down herein,
7. declaration of the Purchaser either conﬁrming or rejecting the delivery,
8. date of signature of handover and takeover protocol; (hereinafter “Handover Protocol”).
   1. In the Handover Protocol, the Parties shall conﬁrm they veriﬁed correct functionality of the device, and that it was installed, conﬁgured and the Seller demonstrated its operability.
   2. The risk of damage to the delivered device passes onto the Purchaser when handover of the device is conﬁrmed by signatures of the contact persons appointed by the Parties on the Handover Protocol. However, this fact shall not release the Seller from its liability for damage incurred from a defective device. The Seller bears the risk of damage to the device until it is handed and taken over.
   3. The Purchaser is not obliged to take over a defective or unﬁnished device, even if such issues alone or in conjunction with other problems do not prevent from proper use of the device. If the Purchaser fails to exercise its right to reject takeover of a defective and unﬁnished device, the Seller and the Purchaser shall state a list of detected defects and unﬁnished work in the Handover Protocol, including the method and date of their removal. If the Parties fail to agree on the deadline for removal of defects in the Handover Protocol, these defects shall be removed within 48 hours from the date of handover and takeover of the device.
   4. If the device and/or a part thereof has defects, which could not have been detected at takeover (hidden defects) and which are covered by the warranty period under Article 11.1 hereof, the Purchaser shall be entitled to claim such defects with the Seller within the warranty period. If the device and/or a part thereof is covered by a warranty exceeding the period under Article 11.1, the Purchaser shall be entitled to claim such hidden defects with the Seller within the longer warranty period.
   5. If the Seller notiﬁes the Purchaser that the device is prepared for handover and takeover and the handover procedure reveals that the device has not been properly completed, the Seller shall pay all costs incurred by the Purchaser in connection with unsuccessful handover and takeover.

##### Warranty and Claims from Defective Delivery

* 1. The warranty period for delivery is 24 months.
  2. The warranty period begins on the day the Purchaser signs the Handover Protocol. If the device is taken over, even with one defect or unﬁnished part, the warranty period begins from the date when the last defect was removed by the Seller.
  3. The Purchaser shall request the removal of a defect of the delivery from the Seller without undue delay after its discovery, but no later than the last day of the warranty period, unless expressly stated elsewhere in this Contract, by a written notice to the Seller´s responsible technical representative speciﬁed in this Contract. A complaint sent by the Purchaser on the last day of the warranty period is deemed to have been lodged in time.
  4. In a written warranty claim, the Purchaser shall describe a defect and method required for removal.
  5. The Purchaser is entitled to withdraw from the Contract if the delivery of defective goods materially violates the Contract. Noncompliance of the delivery (or part thereof) with minimum parameters required by the Purchaser and speciﬁed in the Seller´s Tender in the Technical Speciﬁcation of Performance and in this Contract shall always be deemed a material breach of the Contract.
  6. The Seller commits to remove claimed defects free of charge.
  7. The Seller undertakes to initiate procedures for removing defects within 5 working days from the date of receipt of a claim from the Purchaser, and subsequently and without undue delay inspect the claim, diagnose the defect, notify the Purchaser whether the complaint is acknowledged and inform the Purchaser in writing if a specialized spare part is needed to remove the defect.
  8. The Seller is obliged to remove the defect within 15 working days after the expiration of the period speciﬁed in the previous paragraph in the place of performance. If it is demonstrably necessary to provide specialized spare parts to remove a defect of the device, the Seller is obliged to remove the defect within 30 working days after the expiry of the period speciﬁed in the previous paragraph, unless the Parties agree otherwise. Specialized spare parts are considered custom-made spare parts or spare parts that are not commonly available in the European Economic Area.
  9. Whether or not the Seller acknowledges the claimed defect, it is obliged to remove it within the deadlines speciﬁed in paragraph 11.8 of this Article of the Contract, unless the Parties subsequently agree otherwise. In such a case, the Seller is entitled to demand from the Purchaser the payment of costs incurred. If the Seller rejects a claimed defect, the claim may be assessed by an expert´s report, which shall be ordered by the Purchaser. If a claim is deemed justiﬁed by an expert, the Seller shall also bear the costs of such expert report. If the Purchaser provably claimed the defect without justiﬁcation, it shall be obliged to reimburse the Seller for the costs expediently and demonstrably incurred in its removal.
  10. The Parties shall draw up a defect removal report, wherein they shall conﬁrm the removal of the defect. The warranty period is extended by the time elapsed from the date of the claim until removal of the defect.
  11. If the Seller fails to remove the defect within the deadlines speciﬁed in paragraph 11.8 of this Article, or within the period agreed by the Parties, or if the Seller refuses to remove the defects, the Purchaser is entitled to have the defect removed at its own expense and the Seller is obliged to reimburse the Purchaser for such costs incurred, within 10 days after the Purchaser´s request or to demand the replacement of the device by a non-defective device, in case that the defect deprives the Purchaser from the beneﬁt of this contract. However, this right of the Purchaser shall not release the Seller from liability for defects and the warranty shall have the agreed scope.
  12. The warranty shall not cover defects caused by improper handling, incorrect or inappropriate maintenance, non-compliance with manufacturer´s regulations for operation and maintenance of the device, which the Purchaser took over from the Seller upon delivery or which were notiﬁed by the Seller to the Purchaser in writing. The warranty shall also not cover defects caused by gross negligence or willful misconduct and wear and tear parts.

##### Contractual Penalties

* 1. In the event the Seller fails to observe the deadline for handover and takeover of the delivery speciﬁed in Article 6 paragraph 6.1 of this Contract, the Purchaser is entitled to charge the Seller a contractual penalty of 0.1% of the purchase price for each commenced day of delay, maximally up to 10 % of the purchase price.
  2. If the Purchaser fails to pay the purchase price within the deadlines speciﬁed in this Contract, it shall pay the Seller statutory default interest.
  3. The obliged party shall pay the penalties to the entitled party at the latest within 15 calendar days after receipt of the relevant account of the other Party.
  4. The Purchaser´s claim for damages shall always be maintained, however, it shall not be applicable vis-à-vis third parties.

##### Termination

* 1. This Contract may be terminated by its fulﬁllment, by agreement of the Parties or withdrawal from the Contract due to reasons stipulated by laws or herein.
  2. The Purchaser is further entitled to withdraw from the Contract without any sanctions if any of the below circumstances occurs:
     1. the Seller materially breaches its obligations hereunder,

(xxviii) insolvency proceedings are held over Seller´s assets,

* 1. The Seller is entitled to withdraw from the Contract in the event of a material breach of the Contract by the Purchaser. Purchaser´s failure to pay the Price of Performance within the deadline speciﬁed in this Contract, despite being notiﬁed of this breach by the Seller in writing and provided with a suﬃcient additional period for remedy shall be considered a material breach of the Contract.

##### FORCE MAJEURE

* 1. If either Party is prevented from, or delayed in performing any obligation under this Agreement by any event of Force Majeure, this Party shall not be considered in default or breach of this Agreement and no remedy shall be available to the other Party, unless otherwise provided for in this Agreement. The time for performance of that obligation shall be extended accordingly. However, Force Majeure shall not be applied for payment obligations under this Agreement.
  2. Force Majeure” means any event beyond the reasonable control of a Party, including but not limited to (i) war (whether declared or not), armed conﬂict or serious threat of same (including but not limited to hostile attack, blockade, military embargo), hostilities, invasion, act of foreign enemy, extensive, military mobilization; (ii) civil war, riot rebellion and revolution, military or usurped power, insurrection, civil commotion or disorder, mob violence; (iii) act of terrorism, sabotage or piracy; (iv) act of authority whether lawful or unlawful, compliance with any law or governmental order, rule, regulation or direction; (v) act of god, plague, epidemic, pandemic (including but not limited to limited operational capacity, in particular with regard to production and administration, travel restrictions, limited travel opportunities and shipping diﬃculties), natural disaster, such as, but not limited to violent storm, cyclone, hurricane, earthquake, ﬂood, tsunami; (vi) explosion, ﬁre, destruction of machines, equipment, factories or any kind of installation, prolonged break-down of transport, telecommunication or electric current; or (vii) general labour disturbance, such as but not limited to boycott, strike and lock out; and (viii) any similar event, whether or not similar to the causes speciﬁed above and regardless of whether the cause eﬀects the Party hereunder or its sub-suppliers or sub-contractors. Force Majeure shall also include any Force Majeure events, even, if these could reasonably have been expected due to political or other developments or reasons at the eﬀective date of the Agreement and even if the Force Majeure event has already occurred at the eﬀective date of the Agreement.
  3. The Party aﬀected by Force Majeure shall without undue delay inform the other Party of the existence of Force Majeure, the expected duration and the estimated eﬀect on the ability to perform the obligations under this Agreement.
  4. If Force Majeure has lasted more than 90 (ninety) days and the failure to perform the prevented or delayed obligation would constitute a material breach of this Agreement in the absence of such Force Majeure, then either Party may terminate this Agreement by written notice to the other Party.
  5. If Force Majeure prevent Seller and/ or the Purchaser from fulﬁlling of its obligations, Purchaser shall compensate Seller for expenses incurred in securing, protecting and storing the Equipment.

##### Representatives of Parties, Notices

* 1. The Seller has appointed the following responsible representative for communication with the Purchaser in connection with the subject-matter of performance hereunder:

In technical matters:

xxxxx, E-mail: xxxxx, tel.: xxxxx

In contractual matters:

xxxxx, E-mail: xxxxx, tel.: xxxxx

* 1. The Purchaser has appointed the following representatives responsible for communication with the Seller in connection with the subject-matter of performance hereunder:

In technical matters:

xxxxx

E-mail: xxxxx, phone: xxxxx

In contractual matters:

xxxxx, rector

E-mail: xxxxx, phone: xxxxx

* 1. Unless otherwise agreed herein, all notices that are to be given or may be given between the Parties hereunder shall be made in writing and delivered to the other Party by an authorized courier service, in person (with written conﬁrmation of receipt) or by registered mail sent using a postal service provider; such notiﬁcation shall be deemed to have been delivered on the third business day after dispatch, unless it was sent to a foreign address, whereby it shall be deemed delivered on the ﬁfteenth business day after dispatch. In the event of a warranty claim, a written notice may also be sent via e-mail.

##### Governing Law

* 1. This Contract and all legal relations arising from it are governed by the laws of Czech Republic without giving eﬀect to the principles of conﬂict of laws thereof. The application of the UN Convention on contract for the international sales of goods (CISG) shall be expressly excluded.

##### Intellectual Property Rights

* 1. This Article applies only if the supplied goods include software necessary for the proper use of the goods, or if the Purchaser required delivery of software within the speciﬁcation of the subject-matter of performance.
  2. The Parties declare they have agreed that the Seller´s fee for the provision of a software licence is already included in the price of the goods.
  3. The Seller declares that licenses granted to the Purchaser shall not infringe intellectual property rights of third parties and that it is entitled to transfer the license to the Purchaser. If the Seller fails to comply with this provision, it shall pay all claims of third parties due to infringement of intellectual property rights of third parties and compensation for damage incurred by the Purchaser.
  4. By virtue of this Contract, the Seller grants the Purchaser a user license for a software part of the subject-matter of performance, listed in Annex No. 1 hereto as a non-exclusive, non-transferable and perpetual right to use this part of the subject-matter of performance.
  5. The Seller declares that it is the copyright holder of the SW and has not previously granted an exclusive license to SW to a third party (unless such licensee has given written approval of this Contract), or it at least has a right to the SW permitting it to provide a license to the Purchaser in the scope under this Contract.

##### Final Provisions

* 1. This Contract, including the Annexes, constitutes a complete and comprehensive agreement between the Purchaser and the Seller.
  2. The Parties have agreed that the Seller is not entitled to set oﬀ its receivable, nor a receivable of its garnishee, from the Purchaser against the Purchaser´s receivable from the Seller.
  3. The Seller is not entitled to assign a receivable arising from this Contract or in connection with it to a third party. The Seller is not entitled to assign the rights and obligations under this Contract or any part thereof to a third party.
  4. The Seller undertakes to maintain liability insurance for damage caused in connection with the performance of business activities for the entire term of this Contract, with a limit of indemnity at least in the amount of the purchase price for the subject-matter of this Contract.
  5. If any provision of this Contract later becomes or is found invalid, ineﬀective, apparent or unenforceable, such a defective provision shall not render the Contract invalid, ineﬀective, apparent or unenforceable as a whole. In such a case, the Parties undertake to further clarify such defective provision without undue delay or to replace it upon mutual agreement with a new provision which, in the scope permitted by legal regulations, corresponds to the largest possible degree to the intent of the Parties manifested as of the moment this Contract was concluded.
  6. The Purchaser is the obliged entity pursuant to Act No. 340/2015 Coll., on special conditions for the eﬀectiveness of certain contracts, on the publication of these contracts and on the register of contracts, as amended (hereinafter the “Act on the Register of Contracts”). The Seller acknowledges and expressly agrees to the publishing of the Contract in accordance with the Act on the Register of Contracts. The Parties agree that the Contract shall be published in the register of contracts in accordance with the Act on the Register of Contracts by the Purchaser.
  7. This Contract shall enter into force on the day of its signing by the authorized persons of both Parties and shall take eﬀect on the day of publishing of the Contract in the register of contracts pursuant to the Act on the Register of Contracts.
  8. This Contract may be amended or supplemented only in the form of written numbered amendments, including a speciﬁcation of time and place of signature, signed by authorized representatives of the Parties.
  9. If a Party breaches an obligation under this Contract or if it is able to detect or should be aware of such a breach, it shall notify the other Party which may incur damage without undue delay, and warn it of the possible consequences; in such a case, the injured Party shall not be entitled to compensation for damage which was avoidable in light of the notiﬁcation.
  10. Under the conditions set forth in this Agreement, the Seller undertakes:
      1. to archive all documents required by applicable law that have been prepared for the performance of the subject under this Agreement and to enable the persons authorized to perform control of the project from which the performance under this Agreement is paid for, to perform a control of the documents related to the performance of this Agreement, for the entire period of archiving of the project, but at least until the end of year 2035. The Purchaser is entitled to receive the above-mentioned documents from the Seller free of charge after 10 years from the end of performance under this Agreement;
      2. as a person obliged under the provisions of § 2 letter e) Act No. 320/2001 Coll., on ﬁnancial control in public administration, as amended, cooperate in the performance of financial control. The Licensor will also ensure this obligation for any subcontractors of the Licensor.
  11. This Contract is drafted in English language. The following Annexes are an integral part hereof:

Annex No. 1: Technical Speciﬁcation of Performance According to Award Criteria and Seller´s Tender

In witness of their approval of the content of the Contract, the Parties attach their signatures below.

In Prague dated 30.4.2025 In Montabaur dated 16.4.2025

For UCT Prague For: Novocontrol Technologies GmbH & Co. KG

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

Name: xxxxx Name: xxxxx

Position: Rector Position: Director Sales & Support

Annex No. 1*: Shall be added upon signature of the Contract*



Novocontrol Technologies GmbH & Co. KG, Aubachstrasse 1, 56410 Montabaur, Germany

University of Chemistry and Technology, Prague Technická 5

166 28 Praha 6 Czech Republic

PROLAB DielectricSpectrometer Technical Offer

NOVOCONTROL Technologies GmbH & Co. KG Aubachstrasse 1

56410 Montabaur Germany

Phone: xxxxx

Fax: xxxxx

Mail: xxxxx

Web: [www.novocontrol.com](http://www.novocontrol.com/) Date: 18.3.2025

Questions to: xxxxx

|  |  |  |
| --- | --- | --- |
| Pos. | Pcs | Description |
| 1 | 1 | Concept 40  Turnkey Top Class System F = 3 μHz ... 20 MHz  T = -160 ... +400 °C (± 0.01° C)  System includes high resolution dielectric analyzer ALPHA-ANB, active head sample cell ZGS with 63 built-in reference capacitors (25 pF to 2 nF), computer with GPIB |
|  |  | interface card and 22" TFT monitor, software package DETACHEM, TEMP, and WinFIT, laser printer, complete set of electrical cables. Temperature control with QUATRO Cryosystem.  Temperature range -160 °C ... +400 °C. |
|  |  | Including QUATRO system controller, stabilized power supplies, 120 l dewar with vaporiser, gas heating module, sample cell with gold plated electrodes, cryostat, 2- stage vacuum pump, digital vacuum gauge, complete set of vacuum lines and electrical cables.  System mounted in 19" cabinet |
| 2 | 1 | BDS 1308  Hermetically sealed parallel plate sample cell with variable electrode spacing for liquids and powders. Electrode diameter 20 mm, cell diameter 40 mm.  For usage in combination with Novocontrol ZGS or BDS 1200 sample cells or PhecosBDS. |
| 3 | 1 | BDS 1304-100  set of a few hundred fused silica spacer fibres thickness: 104 μm ± 2 μm  For measurements of liquids using, e.g., the BDS 1308 or BDS 2214 sample cells. |
| 4 | 1 | BDS 1304-50  set of a few hundred fused silica spacer fibres thickness: 50 μm ± 2 μm  For measurements of liquids using, e.g., the BDS 1308 or BDS 2214 sample cells. |
| 5 | 1 | Installation  System installation, performance verification, introduction and training by a qualified Novocontrol engineer on customer site |

**Novocontrol Concept 40**

**Turnkey Broadband Dielectric Spectrometer**

Version date: 2025-03-18

Specification of a Spectrometer for Dielectric, Conductivity and Impedance Measurements on Liquid and Solid Materials

in the Frequency Domain for the Tender

**PROLAB\_Dielectric\_Spectrometer**

#### Frequency Domain Spectrometer

###### Electrical specification of standard spectrometer module for dielectric, conductivity and impedance characterization for frequencies up to 20 MHz

|  |  |
| --- | --- |
| Frequency range | 3 Hz - 20 MHz  continuously adjustable with 32 bit resolution (< 2 ppm) |
| Ac signal voltage amplitude (resolution) | 0.2 mVrms -100 mVrms (6 µVrms)  100 mVrms - 3 Vrms (0.7 mVrms) for frequencies below 10 MHz  100 mVrms -1 Vrms (0.7 mVrms) for frequencies above 10 MHz via 50  output impedance |
| Impedance | Measurable range 10 m - 200 T base accuracy 0.01 % (ZGS) Accuracy 0.1% of measured value depending on frequency and measured impedance \* |
| Capacity | Measurable range 1 fF - 10 F, base accuracy 0.01 %  Accuracy 0.1% of measured value depending on frequency and measured capacity \* |
| Electric loss factor tan() | Measurable range from 30  to 10 k  Resolution 0.01 %; accuracy ± 3·10-5 ± 10-3 of measured value for frequencies between 10 Hz and 100 kHz |
| Phase angle | Measurable range 0 .. 360 degrees  Accuracy 2 m° depending on frequency and measured impedance \* |
| Higher harmonic measurements | Supported up to the maximum frequency of 20 MHz |
| Measurement speed | Up to 10.5 impedance or 19 gain phase data points per second via GPIB interface  Up to 600 impedance data points per second via GPIB interface with option F (not included). |
| Dc bias voltage | Range 40 V Resolution: 1 mV  Accuracy 10 mV |
| Additional measured parameters | Sample dc voltage and current sample ac voltage and current |
| Specifications apply | At the sample cell electrodes within a temperature range from  -160 °C to +400 °C |
| User calibrations | Load, short, open, internal self calibration and diagnostics |
| System control interface | GPIB IEEE 488 |
| Sample cells | Two electrode active cell for temperatures from -160 °C to 400 °C; |
| Temperature control | By standard temperature control system 2.1 |
| System control software | By control and evaluation software for frequency domain dielectric, conductivity and impedance measurements 3.1 |

\* For details refer to specification charts

1. **Temperature Control System**
   1. ***Standard temperature control system (Quatro Cryosystem)***

|  |  |
| --- | --- |
| Temperature range | -160 °C to +400 °C |
| Temperature accuracy | 0.1 °C at the sample |
| Temperature stability | 0.01 °C at the sample |
| Temperature ramps | 0.1 K/min to 20 K/min |
| Typical liquid nitrogen consumption | 1 litre per hour at temperatures > -100 °C |
| Maximum power consumption | 1500 W |
| Principle of operation | **Fully automated liquid nitrogen gas stream temperature control system** with sensor channels for sample temperature, gas temperature, dewar temperature, dewar pressure and isolation vacuum, and output channels for gas and dewar heaters |
| System control interface | GPIB IEEE 488 |
| System control software | DETACHEM control and evaluation software for frequency domain dielectric, conductivity and impedance measurements 3.1. |

2.1.1 Sample cells

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Cell | Materials | Frequency range | Sample thickness/mm | Sample diameter/mm |
| ZGS | Solid | 3 µHz - 20 MHz | 11 mm max. | 40 mm max. |
| BDS 1308 | Liquid (sealed) | 3 µHz - 20 MHz | 3 mm max. | 20 mm |

1. **Software**
   1. ***Control and evaluation software for frequency domain dielectric, conductivity and impedance measurements (DETACHEM/PLOT/TEMP)***

|  |  |
| --- | --- |
| Base functionality | Performs **automated impedance measurements in dependence of independent variables in multi dimensional arrangement**, recalculates dependent variables from measured impedance, displays results in numerical and graphical representation  Performs automated time-domain measurements (voltage/current) with predefined waveforms of voltage or current (potentiostatic and galvanostatic modes, respectively). |
| Independent variables | Frequency, temperature, time, dc voltage, ac voltage, dc current, dc voltage, higher harmonics, additional user defined variables |
| Experiment types | From single sweep to any kind of multi dimensional arrangements up to four dimensions of the independent variables; arbitrary user defined temperature ramp / hold time combinations |
| Dependent variables for each measured impedance data point (frequency domain) | Real part, imaginary part and absolute value of permittivity, modulus, conductivity, serial and parallel impedance, serial and parallel admittance, serial and parallel capacity, serial and parallel inductance, measured ac voltage, measured ac current;  phase angle cp and tan(cp), loss angle 8 and tan(8), measured temperature, measured time, measured dc voltage, measured dc current |
| Dependent variables for each measured voltage/current data point (time domain) | Voltage, current, resistance, conductance, specific resistance, specific conductance, charge, measured temperature, measured time. |
| Supported analyzers for impedance, dielectric and electrochemical impedance spectroscopy | Analyzers listed in 1.1 |
| Supported temperature control systems | System listed in 2. Novocontrol Quatro for Helium systems, Novocontrol Novocool, Novocontrol Novotherm, and the following third party systems or controllers: Eurotherm, Julabo, Espec |
| Graphical representations | Two and three-dimensional diagrams of all dependent variables in dependence of all combinations of the measured independent variables in various representations;  temperature set point and process value over time; graphical system status diagram |
| Numerical results | Two and three-dimensional value of all dependent variables in dependence of all combinations of the measured independent variables in various ASCII formats;  binary result files for one experiment including multi dimensional experiments |
| Supported System control interfaces | Novocontrol GPIB IEEE488 interfaces, National Instruments GPIB IEEE488 interfaces, RS 232 serial port |

* 1. ***Extended evaluation and fitting software for frequency domain measurements (WinFIT)***

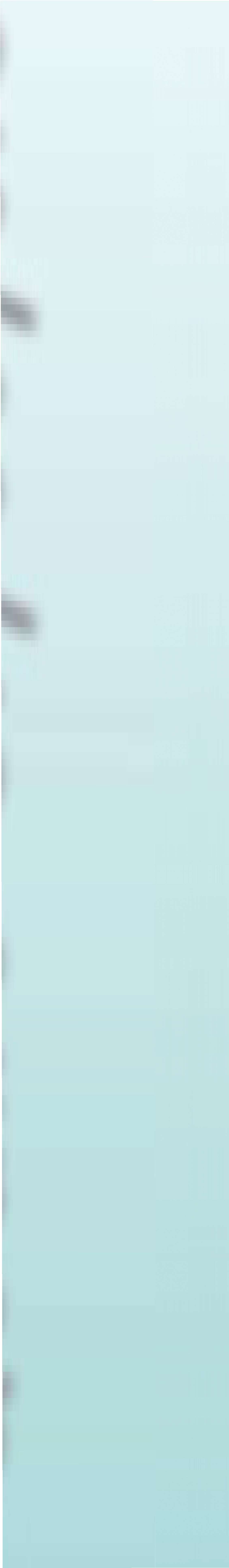
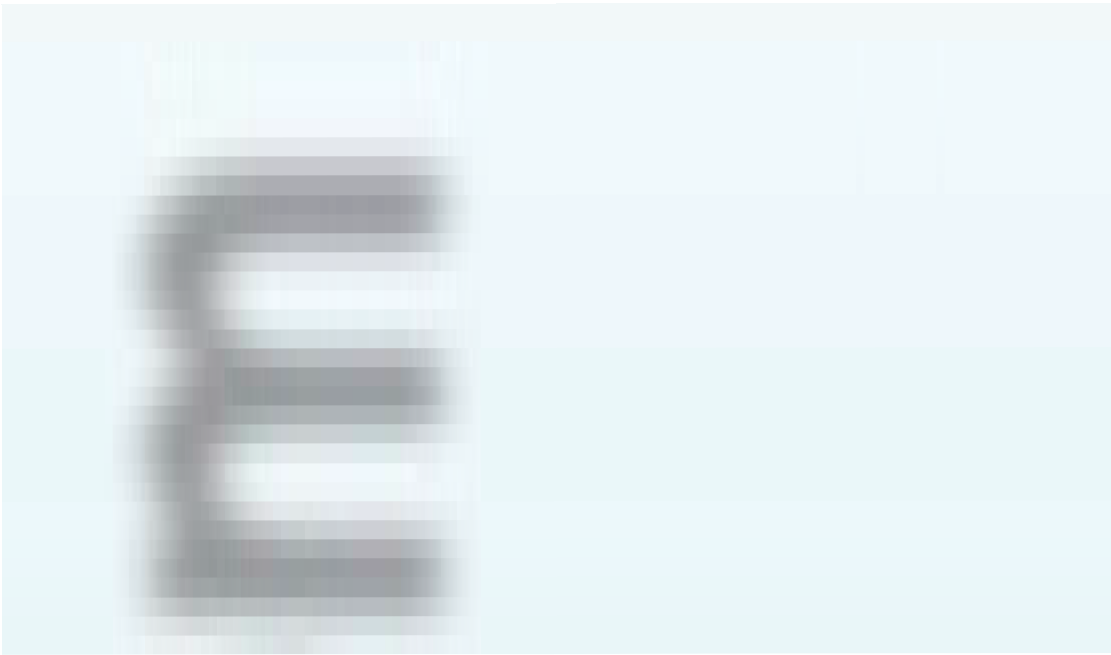
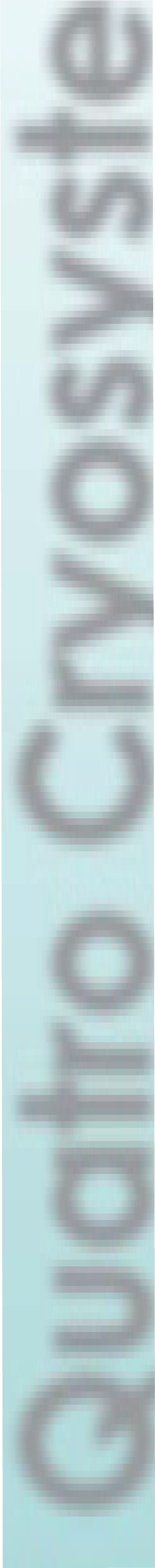
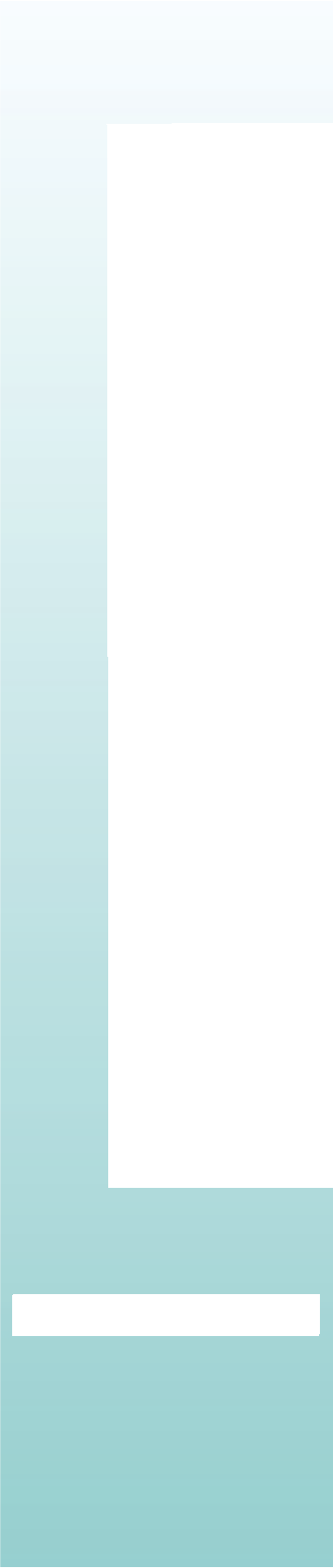
|  |  |
| --- | --- |
| Base functionality | Performs extended evaluations and nonlinear curve fitting on measured impedance spectra, displays results in numerical and graphical representation |
| Independent variables | Frequency, temperature |
| Supported experiment types for evaluation | From single sweep to any kind of multi dimensional arrangements up to four dimensions of the independent variables |
| Dependent variables for each impedance data point | Real part, imaginary part and absolute value of permittivity, modulus, conductivity, serial and parallel impedance, serial and parallel admittance, serial and parallel capacity, serial and parallel inductance, measured ac voltage, measured ac current;  phase angle cp and tan(cp), loss angle 8 and tan(8) |
| Evaluation functions | Online data correction, removal of points, merging and cutting of data curves, subtraction of conductivity contributions from dielectric spectra; Data conversion from frequency into time domain |
| Non linear curve fitting functions | Predefined functions: Havriliak Negami, Dissado Hill, Vogel -Fulcher Predefined impedance components: Resistor, Capacitor, Inductor User defined: Arbitrary arrangements of impedance components, arbitrary user defined complex mathematical functions |
| Graphical representations | Two and three-dimensional diagrams of all dependent variables in dependence of frequency and time in various representations;  three-dimensional curves of one dependent variable in dependence of two independent variables,  Arrhenius diagrams |
| Numerical results | Two and three-dimensional value of all dependent variables in dependence of all kind of combinations of frequency and time in various ASCII formats;  binary result files for one experiment including multi dimensional experiments and fitting results |
| Supported data formats | Formats from software listed in 3.1 and various ASCII formats |

1. **Supply voltage**

230 V/50 Hz. Others upon request.

**5 Various**

* System and software manuals included (PDF on USB stick and on system computer)
* All wires and cables required for system operation included



# Universal Temperature Control System

**Quatro Cryosystem**

**for Materials Analysis**

* High precision turn key temperature control system
* Dedicated sample cell for dielectric and impedance spectroscopy included
* Designed for easy, safe and fully automatic operation
* Wide temperature range: -160°C to +400°C
* 0.01°C stability due to 4 channel Quatro controller featuring PID control algorithms with non-linear extensions
* Includes 4 channel controller QUATRO, stabilized power supplies, cryostat with sample cell, gas heating, liquid nitrogen cooling system, vacuum system



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**NOVOCONTROL Quatro Cryosystem**



**Cryosystem**

quality turn key temperature con- trol system for applications in ma- terials research. A sample cell particularly suited for dielectric and impedance spectroscopy is included. The system has been developed to set or change the temperature of the sample under test with high accuracy and re- producibility. The system is modu- lar and may be combined with any Novocontrol dielectric or im- pedance analyzer.

The Quatro Cryosystem is de- signed to provide easy, safe and fully automatic operation, en- abling computer-controlled long time experiments over several days without supervision.

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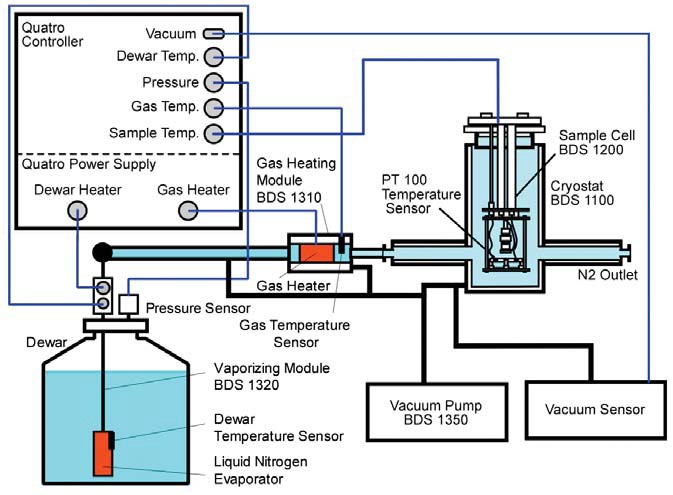
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Principle of operation: A heating element builds up and controls a specified pressure in the liquid nitrogen Dewar vessel in order to cre- ate a highly constant nitrogen stream. The pressure and temperat- ure in the Dewar vessel are measured by two channels of the Quatro controller. The nitrogen stream, heated to a temperature appropriate for the desired sample temperature, flows directly through the sample cell mounted in the cryostat. The gas and sample temperatures are measured by the two remaining channels of the Quatro controller. The four-channel design allows highly stable, fast and safe system operation.

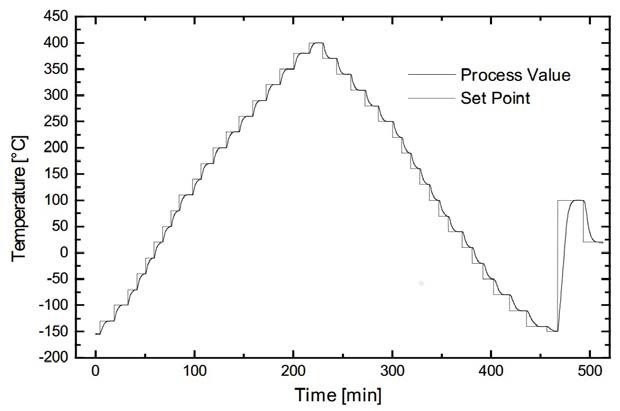


Temperature control extends the

**Appppllications**

versatility of dielectric and im-

pedance spectroscopy and in- creases the significance of the obtained results. Various key ma- terials properties, e.g., molecular relaxations, conductivity, phase separation, phase transitions, ac- tivation energy, glass temperat- ure, rate of blending, purity, ageing, curing, either show marked temperature depend- ence or are only accessible through temperature-dependent measurements.



Stabilization characteristics of the sample temperature (process value) compared to temperature set point (step function). Set point step after sample temperature stabilization to 0.1°C accuracy.

An economical way to operate the QUATRO system without liquid nitrogen is provided by the purge gas option. The temperature range in this mode is limited to 25 °C ... 400 °C.



**Purge Gas Option**

**Features**

* high precision turn key temperature control system
* temperate range -160°C to 400°C
* temperature ramps from 0.01°C/min to 20°C/min
* 0.01°C temperature stability
* temperature overshooting after set point step typically < 0.2°C
* stabilization times typically below 8 minutes (for 0.1°C stability)
* low nitrogen consumption due to automatic pressure - temperature adaptation
* automatic adaptation of controller parameters (selftune)
* 4 channel microprocessor controller with 24 bit ADC and IEC communication port
* vacuum-isolated cryostat and nitrogen lines