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## PURCHASE CONTRACT

### *PTR-TOF ANALYSER*

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#### SELLER

Name **Ionicon Analytik Gesellschaft m.b.H.**  
Registered office Eduard-Bodem-Gasse 3, 6020 Innsbruck, Austria  
Comp. No (IČO) 172007 b VAT No (DIČ) ATU 45012203  
Incorporated in Austria court in Innsbruck section Landesgericht record 172007b  
Represented by Mag. Lukas Luis Kosmas Märk

#### AND

#### BUYER

Name **Ústav výzkumu globální změny AV ČR, v. v. i.  
(Global Change Research Institute)**  
Registered office Bělidla 986/4a, Brno, 603 00 Brno  
Comp. No (IČO) 86652079 DIČ CZ86652079  
Incorporated in Register of public research institutes  
Represented by prof. RNDr. Ing. Michal V. Marek, DrSc., dr. h. c., Director

According to section 2079 of Civil Code, the above parties conclude the following contract:

#### I. SUBJECT MATTER OF CONTRACT

1. The seller undertakes that it will hand over to the buyer and install the subject matter of purchase and perform servicing and maintenance of the subject matter of purchase in accordance with the conditions specified in this contract. The seller undertakes that it will enable the buyer to acquire the ownership rights for the subject matter of purchase and the buyer undertakes to take over the subject matter of purchase and pay the purchase price for it to the seller.

2. The seller also undertakes to hand over the documents concerning the subject matter of contract.

### **II. SUBJECT MATTER OF PURCHASE**

1. The subject matter of purchase is an ultrasensitive PTR-TOF (proton-transfer-reaction time-of-flight) analyser with high resolution for determination of concentrations of volatile organic compounds (VOCs) and aerosols in real time.
2. The subject matter of purchase is specified in more details in Annex No 1 to this contract.
3. The part and accessories of the subject matter of purchase are specified in more detail in Annex No 1 of this contract.
4. The subject matter of purchase will be handed over in compliance with the following documents (ordered according to the degree in which they are binding):
  - a) This contract.
  - b) Written instructions from the buyer.
  - c) Technical standards concerning the materials and activities performed on the basis of this contract
5. Together with the subject matter of purchase, the seller will hand over to the buyer the documents necessary for the handover and use of the subject matter of purchase. These documents include mainly the following:
  - a) Certificates and declarations of conformity for materials and products used.
  - b) Detailed instructions or manuals for use of the subject matter of purchase.
  - c) Detailed instructions or manuals for maintenance of the subject matter of purchase.The documents will be prepared in Czech or English language.
6. The Seller undertakes to perform servicing of the subject matter of purchase for the time of duration of the guarantee period and provide maintenance of the device at the place of installation of the subject matter of purchase, in the following extent:
  - 6.1. Earliest after 11 and latest within 13 months from the handover, installation and testing of the subject matter of purchase; the maintenance will be performed in the following minimum extent: professional PTR cleaning, pump inspection, detector test measuring ionised volatile compounds, software/firmware update, optimising of the connection of all the components, component functionality test and test of the subject matter of purchase as a whole,
  - 6.2. Earliest after 23 and latest within 25 from the handover, installation and testing of the subject matter of purchase; the maintenance will be performed in the minimum extent specified in paragraph 6.1. of this article plus replacing of the pump membranes or the whole pump and replacing of the detector,  
all the parts and new components used for this servicing and maintenance are already included in the purchase price.
7. The seller undertakes to perform the training for maintenance and operation of the subject matter of purchase with the minimum duration of 3 days with eight hours of training for minimum 5 employees of the buyer. The seller undertakes to perform the training of maintenance and operation of the subject matter of purchase latest within one month from the handover, installation and testing of the subject matter of purchase. The training will be performed at the place where the subject matter of purchase is installed. The training will be in Czech, Slovak or English language.

### **III. HANDOVER OF THE SUBJECT MATTER OF PURCHASE**

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1. The complete and faultless subject matter of purchase will be handed over, installed and tested latest **within 9 months from the signature of the contract**.
2. Earlier fulfilment is allowed.
3. The subject matter of purchase will be handed over, installed and tested at the workplace of the buyer at **Bělidla 986/4a, 603 00 Brno, Czech Republic**, unless the parties agree otherwise.
4. If the seller supplies more items than agreed, the purchase contract is also concluded for the excessive amount and the price of the excessive amount is included in the total purchase price.
5. The seller undertakes to hand over the subject matter of purchase unused and without any legal or material defects.
6. The effect of the handover do not occur before the moment when the buyer is allowed to handle the subject matter of purchase at the place of handover.
7. The buyer will be present during the testing of the subject matter of purchase.
8. The fulfilment cannot be refused, even if the conditions of section 1912 (1) of Civil Code are met (mutual fulfilment).

#### **IV. PURCHASE PRICE**

1. The purchase price for fulfilment of this contract was agreed to be: **CZK 11,870,000 excl. VAT**.
2. The price is agreed as the highest permissible price including all the costs of the seller for fulfilment of this contract and price influences in the course of fulfilment of this contract, including all the costs of maintenance in the scope specified in article II par. VII of this contract.
3. VAT of the statutory rate will be added to the price excluding VAT.

#### **V. PAYMENT TERMS**

1. The price for the delivery of the subject matter of purchase and service performed will be paid based on one invoice, unless specified otherwise by the buyer. An annex of the invoice will be a copy of the handover of the subject matter of purchase.
2. The seller is entitled to require an advance payment of up to **30 %** of the purchase price based on an issued advance invoice which can be delivered to the buyer latest within **30 days** after this contract is concluded.
3. All the invoices shall include the particulars of a tax document.
4. If the seller becomes an unreliable VAT payer pursuant to section 160a of VAT act, the seller is obliged to inform the buyer about this fact in writing immediately, latest the next workday after the decision about this fact comes into legal force. In the same way, the seller is obliged to inform the buyer that proceedings have been commenced against it pursuant to section 106a of VAT act.
5. The buyer will pay VAT to the account of the relevant tax administrator in the following cases:
  - a) If the seller publishes information that it is an unreliable VAT payer as of the day of taxable supplies or
  - b) If the seller becomes an unreliable VAT payer before the price is paid or
  - c) In case of any doubts of the buyer whether the seller is an unreliable VAT payer or not.
6. The due date of all the invoices is 25 days from the day on which the invoice is issued.
7. The buyer is entitled to return an invoice with defects within the due date period. The seller is obliged to submit a new invoice or a corrected invoice with a new due date specified.

8. The seller is obliged to deliver the invoice to the address of the registered office of the buyer latest within 5 working days from the day on which the confirmation of the subject matter of purchase handover.
9. An invoice is paid on the day when the corresponding amount is written off the buyer's account.

### VI. GUARANTEE OF QUALITY AND COMPLAINTS

1. The seller provides a guarantee for quality of the subject matter of purchase. For the whole duration of the guarantee period, the subject matter of purchase:
  - a) will be fit for use for the purpose stipulated in this contract.
  - b) will be fit for use for the usual purpose.
  - c) will keep its usual properties.
2. The seller provides a **guarantee for quality** for a period from **12 months**.
3. The guarantee period starts to run on the day when the subject matter handover is confirmed. The guarantee period is extended by the time starting from the day when a complaint is made and ending on the day when the defect is rectified.
4. The buyer is not in delay with claiming a defect if the right for the defect which the subject matter of purchase has at the moment of its handover is claimed in writing within 30 days from the day on which the buyer learns about the defect.
5. The Seller is not in delay with rectification of a defect if the seller starts to perform activities aiming at the defect rectification without any unnecessary delay after the defect is claimed; continues this activity duly and **latest within 25 workdays from the moment when the defect is claimed** it rectifies the defect or replaces the subject matter of purchase with a defect-free one.

### VII. INTERESTS ON OVERDUE PAYMENTS AND CONTRACTUAL PENALTIES

1. The party which is in delay with payment of a debt can be asked by the other party, if it fulfils duly its contractual and statutory obligations, to pay an interest on overdue payment, with the exception of the cases when the party which is in delay is not responsible for the delay. The parties agree on an **interest on overdue payment** at the amount of **0.025 % from the due amount per day**.
  2. The buyer will charge a **contractual penalty of CZK 24,000 per day** in the following cases:
    - a) Delay of the seller with handover of the subject matter of purchase.
    - b) Delay with rectification of a defect on the subject matter of purchase at the moment of its handover.
    - c) Delay with rectification of a guarantee defect.
  3. The buyer will charge a contractual penalty of CZK 50,000 in case the seller does not inform the buyer that the seller has become an unreliable VAT payer or that proceedings have been commenced against the seller pursuant to section 106a of VAT act.
  4. A separate invoice will be issued for the contractual penalty with the due date of 30 days. The day of taxable supplies is considered to be the day on which the invoice is issued.
  5. The parties agree that the obligation to pay a contractual penalty does not affect the right for damage compensation at the amount at which it exceeds the contractual penalty. If a contractual penalty is decreased by the court, the right for damage compensation remains at the amount at which the damage exceeds the amount determined by the court as adequate, without any other limitations.
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**VIII. CONTRACT TERMINATION**

1. The contract can be terminated by a written agreement.
2. The buyer can withdraw from the contract in case of its significant breach by the seller. A significant breach of the contract is considered to be among others:
  - a) Delay of the seller with handover of the subject matter of purchase by more than 30 days.
  - b) Commencement of bankruptcy proceedings in which the seller is in the position of the debtor.
  - c) If it is established that untrue data were included in the bid from the seller in connection with the public contract.
3. The seller can withdraw from the contract in case of its significant breach by the buyer. A significant breach of the contract is considered to be among others:
  - a) Commencement of bankruptcy proceedings in which the buyer is in the position of the debtor.
  - b) Delay of the buyer with settlement of an invoice by more than 30 days.
4. Withdrawal must be made in writing and it becomes valid when delivered to the other party.
5. Withdrawal from the contract does not cancel the mutual vindicatory liability of the parties.

**IX. RESPONSIBLE PERSONS OF THE PARTIES**

1. The representative of the buyer is Ing. Stanislav Juráň, Ph.D., [juran.s@czechglobe.cz](mailto:juran.s@czechglobe.cz). This representative of the buyer can act on behalf of the buyer in connection with this contract in any respect, but he is not allowed to change or terminate this contract.
2. The representative of the seller is Mag. Lukas Märk, [Lukas.maerk@ionicon.com](mailto:Lukas.maerk@ionicon.com). This representative of the seller can act on behalf of the seller in connection with this contract in any respect, but he is not allowed to change or terminate this contract.

**X. JOINT PROVISIONS**

1. The right of ownership for the subject matter of purchase is transferred at the moment when the subject matter of purchase is handed over to the buyer.
2. Without written consent from the other party, none of the parties is allowed to transfer a receivable or liability arising from this contract to a third party.
3. Each of the parties accepts the risk of a change of circumstances pursuant to section 1765 of Civil Code for its debts arising on the basis of this contract.
4. No rights and obligations can be inferred from practices introduced by the parties or customs observed as a standard, both generally and in the particular field, concerning the subject matter of fulfilment of this contract.
5. If any of the provisions of this contracts becomes imaginary (petty), the impact of this defect on the other provisions of this contract will be assessed similarly according to section 576 of Civil Code.
6. The parties exclude application of the following provisions of Civil Code to this contract: section 557 (contra proferentem rule).
7. The seller is aware of the fact that it is a person obliged to cooperate during financial inspection. The seller is obliged to bind all its subcontractors to cooperate during a financial inspection.

8. The parties agree that the court competent to negotiate and decide all the potential disputes arising between the buyer and the seller pursuant to this contract or in connection with it is the general court of the buyer.

**XI. FINAL PROVISIONS**

1. This contract is governed by Czech legal regulations with the exception of colliding provisions. All the connected negotiations are held in Czech, Slovak or English language.
2. This contract does not depend on any other contact. No other contact depends on this contract.
3. This contract contains full agreement concerning the subject matter of the contract and all the particulars the parties were supposed to and wanted to agree in the contract and which they consider important for binding character of this contract. No statement of the parties made during negotiations concerning this contract may be interpreted in contradiction with the explicit provisions of this contract and it does not establish an obligation of any of the parties.
4. This contract can only be changed in writing in the form of numbered supplements to this contract. The parties can object invalidity of the contract or its supplement anytime due to the failure to observe the form, even if the fulfilment has already started.
5. The parties are aware that this contract meets the requirements specified in Act No 340/2015 Coll. and therefore it is subject to the obligation to be published in the register of contracts. The buyer undertakes to enter the contract in the register of contracts within the statutory period and send a confirmation that the contract was published to the seller upon its request.
6. This contract is prepared in two counterparts and each party will obtain one of them.
7. The following annexes are an integral part of this contract:
  - a) Annex No 1: Technical specification of the subject matter of purchase
8. This contract comes into force at the moment when it is published in the register of contracts.

Innsbruck, on this day 1 of February 2019

Brno, on this day 18. 02. 2019

Mag. Lukas Luis Kosmas Märk  
CEO

Ionicon Analytik Gesellschaft m.b.H.

prof. RNDr. Ing. Michal V. Marek, DrSc., dr. h. c.  
Director

Ústav výzkumu globální změny AV ČR, v. v. i.  
(Global Change Research Institute)

### ANNEX NO 1: TECHNICAL SPECIFICATION OF THE SUBJECT MATTER OF PURCHASE

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Subject matter of purchase will fulfil all followed technical parameters:

## PTR-TOF analyser

**Manufacturer: Ionicon Analytik Gesellschaft m.b.H.**

**Type: PTR-TOF 6000 X2**

### General description:

System must be based on principle of PTR-TOF (proton-transfer-reaction time-of-flight) mass spectrometry. Equipment will be primarily used for measurements of concentration changes of VOCs (volatile organic compounds) of both biogenic and anthropogenic origin (including fluxes) in laboratory and field conditions. The system must enable measurements of aerosol and VOCs of lower boiling point, system must enable user defined calibration by use of chosen volatile organic compounds diluted in water and must include zero air generator (air without humidity and volatile organic compounds) for background noise measurements, and must enable isomers separation by use of fast gas chromatography.

### Technical parameters:

#### I. Technical specifications of PTR-TOF analyser:

- 1) Mass resolution for  $m/z > 79$ : at least 5400 FWHM
- 2) Mass resolution for  $m/z > 147$ : at least 6000 FWHM
- 3) Sensitivity for  $m/z 79$ : at least 950 cps/ppbv
- 4) Sensitivity for  $m/z 147$ : at least 950 cps/ppbv
- 5) Response time  $< 100$  ms
- 6) Detection limits, integration time 1 min:  $m/z 79$ :  $< 10$  pptv
- 7) Detection limits, integration time 1 min:  $m/z 181$ :  $< 1$  pptv
- 8) Minimal linearity range: 1 pptv – 5ppmv
- 9) Minimal reaction conditions E/N: 50 – 300 Td
- 10) Enables permanent automatic mass scale calibration
- 11) Enables measurements of volatile organic compounds of molecular weight from 32 to 1800

#### II. Technical specification of analyser's inlets:

- 1) Enables to set the temperature at least in range 50 – 150 °C
- 2) Enables to set the inlet flow at least in range 50 – 700 ml min<sup>-1</sup>
- 3) Enables to regulate the inlet pressure at least in range 500 – 1500 mBar

#### III. Technical parameters of PTR-TOF ion source:

- 1) Is optimized for production of  $H_3O^+$ ,  $NO^+$ ,  $O_2^+$ ,  $Xe^+$ ,  $Kr^+$
- 2) Purity or primary ions  $H_3O^+$   $>99\%$

## **PTR-TOF analyser**

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- 3) Purity of primary ions  $\text{NO}^+$ ,  $\text{O}_2^+$ ,  $\text{Xe}^+$ ,  $\text{Kr}^+$  > 95%

### IV. Technical specifications for add-on for aerosol measurement:

- 1) Minimal absorption efficiency of air VOCs, based on denuder > 99,9%
- 2) Minimal detection limit for m/z 200 and integration time 1 min <  $5 \text{ ng m}^{-3}$
- 3) Enables thermo desorption at temperatures at least 100 - 150 °C
- 4) Enables automatic background subtraction (zeroing) in PTR-TOF analyser

### V. Technical specifications of calibration unit:

- 1) Contains at least two ports for liquid standard
- 2) Contains at least two ports for gas standard
- 3) Contains heated transfer line between PTR and calibration unit
- 4) Enables to control the unit by the software

### VI. Technical specification of zero air generator:

- 1) Air flow at least  $1 \text{ l min}^{-1}$
- 2) Maximal output pressure > 5 Bar

### VII. Technical specifications of fast gas chromatography:

- 1) Maximal time for spectrum production < 1 min
- 2) Minimal speed of heating  $20 \text{ }^\circ\text{C s}^{-1}$
- 3) Minimal speed of cooling  $10 \text{ }^\circ\text{C s}^{-1}$

### **Accessories:**

- 1) Gas calibration standard containing compounds of molecular weights at least in range of 32 - 145 and at least 10 different compounds.
- 2) High-performance notebook (minimal 8GB RAM) with at least 2TB SSD disc and installed software for complex control of the whole system including all peripheral devices. Software must enable automatic switching of inlet valves, view of the data acquired, basic data handling etc.