



OPERAČNÍ PROGRAM PRAHA
KONKURENCESCHOPNOST



ADDITIONAL INFORMATION ON THE TENDER CONDITION Nr. 2

Contracting Authority: Fyzikální ústav AV ČR, v.v.i.
Seat: Na Slovance 2, 182 21 Praha 8
Identification No.: 68378271
Tax Identification No.: CZ68378271
Person authorized to represent the Contracting Authority: Prof. Jan Řídký, DrSc., Director

Public Contract name: MOVPE Apparatus

The Contracting Authority in accordance with § 49 of Act No. 137/2006 Coll., on Public Procurement, as amended (hereinafter the "Act"), announces the following additional information on the tender conditions relating to the public supply contract published in the Journal of procurement contracts under the registration number 479977.

The Contracting Authority is due to maximum access of this public procurement to potential contractors replaced the binding draft contract **for the part 1 of the procurement - MOVPE apparatus** with partial commercial terms and conditions. The contracting entity in connection with the modifications of the tender conditions and in accordance with § 40/3 of the Act extended the deadline for submission of bids **for the part 1 of the procurement - MOVPE apparatus**. There are changes in the wording of paragraphs 2.2, 4.1, 4.4, 4.5, 6.1, 9.1 and 9.2 of the tender documentation which are now valid as amended below and adding paragraphs 6.2 and 9.3 to 9.17:

- 2.2 Bids for part 1 of the tender shall be submitted no later than on **August 1, 2014** by **10:00 am** and bids for part 1 of the tender shall be submitted no later than on **June 16, 2014** by **10:00 am**, always to the address of the Contracting Authority's seat at Na Slovance 1999/2, 182 21 Praha 8, Czech Republic, to the mail room at the ground floor by the main entrance (please use the entrance from Pod Vodárenskou věží 1 street). Bids may be delivered by any suitable means (mail, courier, personally, etc.) at the above address on business days between 7:30 am and 3:15 p.m. and on the last day of the submission period only **by 10:00 am**. Other methods of delivery shall not be considered to constitute a properly delivered bid.
- 4.1 Subject matter for the part 1 hereof is specified in more detail in Annex No. 5a-1).
- 4.4 The tender documentation specifies the minimum technical requirements in Annex No. 5a-1). It is permitted that bidders supply the same or higher level solution, than those described in the technical specification, but it must always comply with the minimum requirements as set forth herein.
- 4.5 Bidders must always comply with technical requirements stipulated herein; should a bidder fail to comply with these he shall be excluded from further proceedings. Bidders are obliged to prove guaranteed technical parameters to the Contracting Authority as specified herein, i.e. bidders shall submit detailed technical specification of the offered solution containing at least the best achievable measuring parameters, which must demonstrate compliance with the minimum technical parameters specified in Annex No. 5a-1) for the part 1 of the tender and in Annex No. 1 to the contract for the part 2 of the tender in the Czech or English language (other language mutations will not be admissible). Specified parameters must be achieved also during installation of the apparatus / equipment in the laboratory of the Contracting Authority. The submitted documentation shall form an annex to draft contracts.



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6.1 Payment terms for the part 1 of the tender are:

The selected supplier is entitled to invoice the first part of the purchase price corresponding to maximum 50% of the total price for the realization of the subject of the conclusion of the work.

The second part of the purchase price corresponding to maximum 40 % of the total price is the selected supplier entitled to invoice after the demonstration of the functionality of the subject of the conclusion of the work (MOVPE Apparatus) based on a signed protocol of the demonstration of the functionality of the Apparatus.

The third part of the purchase price corresponding to the remaining amount of the total price is the selected supplier entitled to invoice after the delivery of the subject of the conclusion of the work (MOVPE Apparatus) based on a signed handover protocol.

The Contracting Authority prefers electronic invoicing, with the invoices being delivered to efaktury@fzu.cz.

6.2 Payment terms for the part 2 of the tender have been specified in the attached binding draft contract, which forms an integral part of the tender documentation as Annex No. 5b) of the tender documentation.

9.1 Bidders are obliged for the part 1 of the tender as a part of the bid process and submit a complete proposal for the contract work, which will include all of the public tender including the fulfillment of all the conditions specified in the tender documentation, particularly the wording of commercial terms and conditions in accordance with paragraph 9.2 to 9.17, the terms of payment under paragraph 6.1, the conditions laid down for processing the offer price in accordance with paragraph 5.1 to 5.4 and the conditions relating to the fulfillment minimal technical specifications of the subject of performance in accordance with paragraph 4.1, 4.3 to 4.6 set out by the Contracting Authority; the technical specifications of the contracting authority listed in Annex 5a-1) and filled Technical specification table listed in Annex 5a-2) must be attached to the proposal for the contract work.

Bidders are obliged for the part 2 of the tender to accept without reservation or change the text of the draft contract, which forms an integral part hereof as Annex No. 5b). Bidders are authorized to fill in their identification data, the bid price and other clearly marked information that are to be filled in. Bidders are not authorized to change or add to the contracts in any manner, with exception of those parts which the Contracting Authority highlighted. Any breach of this condition will result in exclusion of the Bidder from the tendering proceedings.

9.2 The draft contract prepared pursuant to Section 9.1 for the relevant part of a public contract which the Bidder is involved must be duly signed by Bidders, by the statutory representative or the person duly authorized to do so. Original or notarized copy of the power of attorney must be in that case attached to the draft contract as signed by the Bidder. Signed contract forms an integral part of the bid. Any breach of this condition will result in exclusion of the Bidder from the relevant part of the tendering proceedings.

9.3 The draft contract contained in the submitted bid shall in no way preclude or restrict privileges or authority requirements specified in the tender documentation (including attachments).

9.4 Payment terms shall be determined in accordance with paragraph 6.1 and 6.2.



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Commercial terms applicable for the part 1 of the tender:

- 9.5 The Bidder shall include in the contract draft that it has all the professional prerequisites required for the supply of the subject of performance, that it is authorised to supply the subject of performance and there exist no obstacles on the part of the Bidder that would prevent the Bidder from supplying the subject of performance.
- 9.6 The delivery of the subject of performance at specified time and in the quality as set out in Annexes No. 5a-1 and 5a-2 are of essential importance for the Contracting Authority in view of the schedule of activities within the Project LABONIT. The project end on 30 June 2015 and all activities under the project must be completed as of this date including handover and invoicing. In case the Supplier fails to observe these contractual terms, the Contractor Authority may incur damage.
- 9.7 The Supplier shall allow the contracting authority to control the execution of the work, as a minimum the participation of representatives of the contracting authority on the demonstration of the functionality of the subject of the performance at the place of manufacture prior to delivery of the subject of the performance.
- 9.8 The Supplier shall deliver the subject of the performance (MOVPE apparatus) within 8 months from the date of conclusion of the contract work.
- 9.9 In the case of Supplier's delay of the delivering of the subject of the performance (MOVPE apparatus) the contracting authority is entitled to charge a penalty of 0.01% of the total purchase price for each day of delay in delivery.
- 9.10 If the contractor is in delay with the delivery of the subject of the performance (MOVPE apparatus) longer than 10 weeks, the contracting authority has the right to withdraw without any penalty from the contract for work.
- 9.11 The Price of the subject of the performance must be determined in the draft contract in full compliance with Article 5 of the tender documentation, especially as the maximum price and the maximum admissible price.
- 9.12 The Contracting Authority shall be fixed in the contract no penalty. In case of delay of payment of the Contracting Authority of the purchase price can only be charged interest on late payments in accordance with the laws of the Czech Republic.
- 9.13 Payment of the penalty does not affect the right of the Contracting Authority to claim damages.
- 9.14 The Contracting Authority requires the warranty for the quality of the subject of the performance for at least 15 months.
- 9.15 The Supplier shall be obliged to cooperate during financial inspections carried out in accordance with Act 320/2001 Coll., on Financial Inspections, as amended.
- 9.16 The Supplier shall be obliged to provide to the Contracting Authority any and all documents relating to the contract, as may be requested by the audit body.
- 9.17 The Supplier shall be obliged to allow access to premises and sites connected with the project and its implementation to all authorized personnel of the Managing Authority, whether in service of the Magistrate of the Capital City of Prague, Ministry of Finance,



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European Commission, European Court of Auditors, Supreme Audit Office of the Czech Republic and other authorized state administration bodies.

9.18 The Supplier shall be entitled, complying with provision of Act No. 137/2006 Sb., on Public Procurement, as amended, to fulfil / perform any part hereof using subcontractors. In such cases the Contractor shall be obliged to ensure that each of his subcontractors complies with provisions of Sections 9.15 to 9.17. The list of subcontractors has to be attached to contract draft as Annex, including performance specification that will implement these subcontractors.

The Contracting Authority also cancels Annex No. 5a of the tender documentation (binding text of the contract work for the part 1 of the tender including annexes).

The Contracting Authority instead of the canceled Annex No. 5a of the tender documentation (binding text of the contract work for the part 1 of the tender including annexes) attached Annex No. 5a-1 (Technical specifications) and 5a-2 (Technical specification table) previously Annexes No. 1 and No. 2a of the contract work. List of Annexes of the tender documentation is now the following:

LIST OF ANNEXES:

1. Cover sheet for both parts of the public contract
2. Affidavit on compliance with basic qualification requirements
3. Affidavit on economic and financial capacity for both parts of the public contract
4. Form / List of important project
5. a-1) Technical specification for part 1 of the public contract
a-2) Technical specification table for the subject matter for part 1 of the public contract
b) binding draft wording for part 2 of the public contract with annexes
6. Information pursuant to § 68(3) of the Act

All other provisions of the contract documents shall remain unchanged and valid.

The tender conditions and the time limit for the submission of tenders for **part 2 of the public contract - Chamber for removal of ammonia and metal-organics** have not changed!

In Prague

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prof. Jan Řídký, DrSc., director

Annexes:

- 5a-1) Technical specification for part 1 of the public contract
- 5a-2) Technical specification table for the subject matter for part 1 of the public contract



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Annex No. 5a-1 – Technical specification „MOVPE Apparatus“

The subject matter of this Contract is supply (acquisition) of an apparatus based on organo-metallic vapour phase epitaxy technology allowing preparation of nitride nanoheterostructures. The Apparatus construction shall use the latest knowledge allowing production of the highest quality nitride nanoheterostructures. Acquisition shall be understood as purchase, tailor-made solution / manufacture, delivery, installation and commissioning of the Apparatus. The Apparatus must comply with all technical and safety standard valid in the Czech Republic for this type of equipment. Performance hereunder includes handover of the complete documentation for the Apparatus.

Obligatory requirements:

- Apparatus must enable growth of high quality nitride semiconductors with broad band gap energy with the epitaxy growth temperature up to 1200 °C.
- Small size vertical reactor construction designed for research and development application is required to decrease the energy and material consumption (working gas mixture flow rate through the reactor around 20slpm).
- The introduction of carrier gas and precursor mixture into the reactor must have vertical alignment with homogeneous precursor concentration and flow over whole susceptor area. This geometry and similar construction is used in majority of industrial apparatuses and improves the homogeneity of the epitaxial layers.
- The distance of metal-organic entrance and the substrate has to be adjustable depending on the required growth parameters (temperature and pressure) of different nitride compounds (AlGa_N, Ga_N or InGa_N).
- Precursors of the group III and group V elements have to enter the reactor separately.
- The reactor walls and the mixing manifold have to be cooled.
- Apparatus has to be equipped at least by 5 branches for metal-organic precursors (TMGa, TMI_n, TMAI, DMHz, Cp₂Mg), and has to have preparation for at least 2 spare metal-organic lines.
- Apparatus must contain lines for at least 4 gas sources (NH₃, N₂, H₂ and SiH₄).
- The TMI_n line has to be equipped by the component measuring concentration of TMI_n in line and controlling the flow rate through the MFC (closed loop).
- The system should be equipped by at least 3 thermostatic water cooled baths for metal-organic cooling
- Rotary susceptor with resistive or radiofrequency heating is required for achieving high thickness and compositional homogeneity of the epitaxial layers.
- Epitaxial process has to be computer controlled enabling 1 nm precision in preparation of nanoheterostructures.
- The system has to enable equipment by in situ monitoring of epitaxial process by measuring the curvature of sample during the epitaxial process. Three optical ports are necessary for this monitoring.
- The apparatus has to be able to prepare epitaxial layers with thickness deviation below 6%.
- The system has to be installed in the laboratory with size 510 x 410 x 300 cm (length x width x height).



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Annex No. 5a-2 – Technical specification table: „MOVPE Apparatus“

The subject matter of the public contract is equipment based on technology allowing organo-metallic epitaxy and preparation of nitride nano-hetero-structures which, in accordance with Section 46(4) the Act includes following parts and complies with technical conditions:

Description and minim specification of the Apparatus as defined by the Contracting Authority	Description and specification of the Apparatus offered by the bidder	Complies YES/NO
MOVPE APPARATUS		
Apparatus must enable growth of high quality nitride semiconductors with broad band gap energy with the epitaxy growth temperature up to 1200 °C.		
Small size vertical reactor construction designed for research and development application is required to decrease the energy and material consumption (working gas mixture flow rate through the reactor around 20slpm).		
The introduction of carrier gas and precursor mixture into the reactor must have vertical alignment with homogeneous precursor concentration and flow over whole susceptor area.		
The distance of metal-organic entrance and the substrate has to be adjustable.		
Precursors of the group III and group V elements have to enter the reactor separately.		
The reactor walls and the mixing manifold have to be cooled.		
Apparatus has to be equipped at least by 5 branches for metal-organic precursors (TMGa, TMIIn, TMAI, DMHz, Cp ₂ Mg), and has to have preparation for at least 2 spare metal-organic lines.		
Apparatus must contain lines for at least 4 gas sources (NH ₃ , N ₂ , H ₂ and SiH ₄).		
The TMIIn line has to be equipped by the component measuring concentration of TMIIn in line and controlling the flow rate through the MFC (closed loop).		
The system should be equipped by at least 3 thermostatic water cooled baths for metal-organic cooling.		
Rotary susceptor with resistive or radiofrequency heating is required for achieving high thickness and compositional		



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homogeneity of the epitaxial layers.		
Epitaxial process has to be computer controlled enabling 1 nm precision in preparation of nanoheterostructures.		
The system has to enable equipment by in situ monitoring of epitaxial process by measuring the curvature of sample during the epitaxial process. Three optical ports are necessary for this monitoring.		
The apparatus has to be able to prepare epitaxial layers with thickness deviation below 6%.		
The system has to be installed in the laboratory with size 510 x 410 x 300 cm (length x width x height).		

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 Apparatus complies (or exceeds) the required parameters, or in which manner the offered Apparatus ensures the required functionality.