

DKZ/23/2009

Date: Warsaw, 31.03.2009

Legal Grounds

This public tender is conducted according to Public Procurement Law of January 29, 2004 (position 1655 in Polish Journal of Acts No 223 of 2007 with later changes).

INSTYTUT TECHNOLOGII ELEKTRONOWEJ
Al. Lotników 32/46, 02-668 Warsaw, Poland

TERMS OF REFERENCE for:

**DELIVERY OF THE SYSTEM FOR REACTIVE ION ETCHING WITH INDUCTIVELY COUPLED
PLASMA (ICP) SOURCES**
CPV 31700000

**Proceedings are conducted according to open procedure for assessed value above EUR
206 000,00**

1. Name (company name) and address of the Awarding entity.

This proceedings are conducted by Tender Committee of Instytut Technologii Elektronowej,
Al. Lotników 32/46, 02-668 Warsaw, Poland.
Web page: <http://www.ite.waw.pl>

2. Procedure for awarding the contract.

These proceedings are conducted in mode of open procedure according to Article 39 of Public Procurement Law of January 29, 2004.

The tenders submitted will be opened and evaluated by the Tender Committee according to the evaluation criteria.

From all tenders which have not been rejected, the one will be selected which receives the highest number of points calculated according to the evaluation criteria.

3. Description of the object of contract.

The object of the order is a delivery, installation, start up and testing of the brand new **system for Reactive Ion Etching with Inductively Coupled Plasma (ICP) Sources**, hereinafter called "system".

Requirements and technical parameters of the object of the order are indicated in appendix No. 1 of this Terms of Reference.

4. Partial and variant tenders are not allowed.

5. Time limit for contract performance.

Deadline for completion of the tender including installation, start up and testing – maximally to 24 weeks after signing the Contract.

6. Description of the conditions for participation in the procedure and the description of the method used for the evaluation of the fulfillment of those conditions:

Eligible to compete for a contract shall be economic operators who:

- 6.1. Fulfill conditions defined in article 22 paragraph 1 and are not being excluded from the proceedings pursuant to Article 24 paragraph 1 and 2 “Public Procurement Law”.
- 6.2. Prove, that within the period of the last three years, or if being active in the business for shorter period – in this period, have completed at least 10 deliveries corresponding in terms of their type and value to supplies being the object of contract, with the indication of the buyers
- 6.3. Prove that they are in the possession of a insurance policy or other insurance document, proving that they are insured for the civil liability in the area of their business activity.

Evaluation of the above requirements will be performed according to the rule: “fulfil - not fulfil”, on the basis of documents mentioned in point 7 of this Terms of Reference.

7. Information concerning declarations and documents to be provided by the contractor to confirm the fulfillment of the conditions for participation in the procedure:

- 7.1. Signed statement, which is enclosed to this Terms of Reference, about fulfillment of conditions defined in article 22 paragraph 1 Public Procurement Law [Appendix No. 2].
- 7.2. Excerpt from the appropriate register or current certificate from commercial entities' evidence, issued not earlier than 6 months prior to deadline for submission of the offers (certified for conformity with original).
- 7.3. Certificate of no delay with tax and social security payments, or has obtained a immunity or postponement of such overdue payments issued by appropriate authority, issued not earlier than 3 months prior to deadline for submission of the offers (certified for conformity with original).
- 7.4. Current information from National Penal Register or equivalent certification of proper judicial or administrative organ, which will confirm that they are not being excluded from the proceedings pursuant to Article 24 paragraph 1 items 4,5,6,7,8 “Public Procurement Law” issued not earlier than 6 months prior to deadline for submission of the offers (certified for conformity with original).
- 7.5. Current information from National Penal Register which will confirm that they are not being excluded from the proceedings pursuant to Article 24 paragraph 1 items 9 “Public Procurement Law” issued not earlier than 6 months prior to deadline for submission of the offers (certified for conformity with original).
- 7.6. The contractor which has its site outside the territory of Poland should submit the following documents:
 - a) Certificate of not being subject to any liquidation, bankruptcy or similar proceedings,
 - b) Statement that Contractor has not been precluded from participation in public procurement proceedings,
 - c) Certificate of no delay with tax and social security payments, or has obtained a immunity or postponement of such overdue payments issued by appropriate authority,

instead of documents mentioned in points 7.2, 7.3 and 7.5.

The Contractor should submit such documents, in accordance with the legal provisions of the country where they are established signed by authorised person.

If, due to the Contractor's jurisdiction, no official documents are available to confirm any of the requirements listed in items 7.4 and 7.6 above, the Contractor should submit a statement, signed in front of the notary, court or a relevant administrative body, as applicable in contractor's jurisdiction, confirming that the Contractor meets these requirements.

- 7.7. The list of the completed deliveries – mentioned in point 6.2 of the Terms of Reference.

7.8. The insurance policy - for both employer's liability risks and public liability risks.

These documents can be presented in the form of originals or photocopies and should be signed by Contractor or his authorised representative.

The lack of any of the above documents will cause the tender being rejected from further proceedings.

8. Information on the manner of communication between the awarding entity and the contractor as well as of delivery of declarations and documents, indication of persons authorised to communicate with the contractor.

The contact person in matters concerning the tender are:
Michał Urbański MSc., e-mail: urbanski@ite.waw.pl

Please address all written correspondence, related to this tendered proceedings, to:

Instytut Technologii Elektronowej
Al. Lotników 32/46
02-668 Warsaw, Poland.
building No VI, room 216

Fax: + 48 22 548 78 46.

9. Deposit requirements:

The value of guarantees is 50 000,00 PLN (say: fifty thousand PLN) and can be introduced in:

- Cash
- Bank guarantee
- Insurance guarantee

Other forms of security are defined in article 6b paragraph 5 item 2 . **Act of 9 November 2000 on the establishment of the Polish Agency for Enterprise Development (position 1158 in Polish Journal of Acts No 109).**

The guarantees introduced in cash should be transferred to the bank account : BRE Bank S.A. O/Warszawa 47 1140 1977 0000 5580 4500 1001.

The guarantee introduced in any other forms should be submitted at ITE cash office which is located at Instytut Technologii Elektronowej, Al. Lotników 32/46, 02 – 668 Warsaw, Poland, building VI room 218 (business hours: 9:00÷14:00).

The guarantee has to be provided before submitting the tender.

The Awarding Entity will withhold guarantee within interests in cases defined in article 46 paragraphs 4a and 5 of the Public Procurement Law.

10. Tender validation time – 60 days.

11. Description of the manner of the tender preparation.

The tender should include:

- a) Name and address of the Contractor,
- b) Date of preparation of the tender,
- c) Filled in Appendix No 1 to this Terms of Reference.
- d) Net price in PLN (The price in EUR or USD is allowed. In the case of submission of the tenders in EUR or USD, the price will be exchanged to polish zlotych PLN according to selling exchange rate of the National Bank of Poland dated on the day before of opening of the tenders).
- e) Time of contract performance,
- f) Indication of the component tasks of the order that will be assigned to subcontractors [Appendix No 3],

The tender should be signed by Contractor or his authorised representative.

Together with the offer the contractor is allowed to submit required documents defined at point 7 of this Terms of Reference, to confirm the fulfillment of the conditions for participation in the procedure.

In the case the contractor company is located outside Poland, it is approved to submit the tender as well as the documents required from the contractors as specified under point 7 of this Terms of Reference either in Polish or in English language.

The contractor is allowed to submit only one offer.

All costs of preparation of the tenders, regardless of the results of the tender, shall be covered by the Contractor.

12. Date and place of submission and opening of tenders.

The tenders should be submitted at the site of the Awarding Entity in Warsaw at Al. Lotników 32/46, building No VI, room 216, by 12⁰⁰ am, on 14th May 2009 (in working days from 9 am till 2 pm). **The tenders submitted after this deadline will not be considered.**

Opening of the tenders will take place on 14th May 2009 at 12¹⁵ am. at the site of the Awarding Entity: Warsaw, Al. Lotników 32/46 in the building No VI, room 120.

The Awarding Entity will open the tenders in accordance with its internal procedures but on occasion may hold a public opening which your representatives may attend.

The offers must be submitted in non-transparent and closed envelopes or packages. The envelope or package must be addressed as follows:

**Instytut Technologii Elektronowej
Al. Lotników 32/46
02-668 Warsaw
Building No VI, room 216
Do not open before 12¹⁵ am, on 14th May 2009.**

**OFFER FOR:
DELIVERY OF THE SYSTEM FOR REACTIVE ION ETCHING WITH INDUCTIVELY COUPLED
PLASMA (ICP) SOURCES**

The envelope or package must include full name and address of the Contractor.

The Awarding Entity does not accept responsibility for consequence of contractors failure to keep the above requirements.

13. Description of the method of the price calculation.

The net price in PLN (EUR or USD) must include:

- a) the system according with requirements indicated in Appendix No 1 of this Terms of Reference,
- b) transport, unloading and positioning
- c) delivery conditions DDP Warsaw
- d) insurance,
- e) installation,
- f) start up and acceptance tests,
- g) training for 3 persons held at the site of the Awarding Entity.

14. Description of criteria which the awarding entity will apply in selecting a tender, specifying also the importance of particular criteria and method of evaluation of tenders.

The Awarding Entity will evaluate whether the tender meets requirements introduced in this Terms of Reference. If the tender is valid (meets requirements introduced in this Terms of Reference), it will be taken into consideration in choice of the best one.

Offer evaluation criteria:

- Price - 95%
- Warranty - 5%

Within each of the criteria, the evaluation will take place according to the following rules:

14.1 For the price: number of points in the price criteria will be calculated according to the following formula:

$$P_n = C_{\min} / C_n * 100 * W$$

- where: P_n – points in price criteria
 C_{\min} – the lowest price from all the offers
 C_n – the price from the offer of n-th bidder
 W – weight of the “Price” criteria”

Maximum number of points to be gained within the price criteria is 95.

14.2 For the warranty period: number of points in warranty criteria will be calculated to the following way:

$$G = \begin{cases} \frac{G_n - 12}{G_{\max} - 12} * 100 * W & \text{dla } G_{\max} > 12 \\ 0 & \text{dla } G_{\max} = 12 \end{cases}$$

- where: G - points in warranty criteria
 G_n - the warranty period from the offer of n-th bidder (in months)
 G_{\max} - the maximum warranty period (in months) from all the offers
 W - weight of the “Warranty period” criteria.

Maximum number of points to be gained within the warranty criteria is 5.

The sum of points received in all criteria makes aggregate evaluation of the tender.

15. Information concerning formalities which should be met following the selection of a tender in order to conclude a public procurement contract.

Contract with the winning Contractor will be signed within the deadline not shorter than 10 days from publication of the tender results, but not later than the date of tender validation.

16. Other important statements which will be included in the contract.

The following statements will be included in the contract:

16.1. Indemnity

- 1) In case of delay, caused by negligence, or poor performance of the Seller, the Seller will pay to the Buyer an indemnity of 0,1% of the value of the object of Contract for each working day of delay up to 10% of it's value.
- 2) In case of delay in payment, the Buyer will pay to the Seller indemnity of 0,1% of the value of delayed payment for each day of delay up to 10% of it's value.
- 3) In case the Seller will cancel the Contract without reason caused by the Buyer, the Seller will pay to the Buyer penalty of the 10% of the total Contract value and the Seller will transfer back all the received payments for the subject of this contract to the Buyer account.
- 4) In case the Buyer will cancel the Contract without reason caused by the Seller, the Buyer will pay to the Seller penalty of the 10% of the total Contract value plus documentary evidence costs of materials and labour based on the following schedule:
 - a) in period shorter than 30 days from order placement - 20% of the contract value
 - b) in period shorter than 30 days before delivery and acceptance – 100% of the contract value
 - c) in period between mentioned in points a and b – percentage approximated by linear function.
- 5) In case of delay, caused by the Seller, in delivery longer than 3 months, the Buyer can cancel the Contract and the Seller will pay to the Buyer penalty of the 10% of the total Contract value and the Seller will transfer back all the received payments for the subject of this contract to the Buyer account.

16.2. Warranty

- 1) The Seller undertakes a warranty of correct operation and technical quality of the delivered system for “warranty period included in the offer” months, calculated from the date of the final acceptance protocol.
- 2) The Seller within warranty period covers costs of the repair or replacement of the defective goods and costs of their transport to the Buyer site after repair.
- 3) During the warranty period, in case of the necessity of the repair outside the Buyer site, the Seller has the obligation to make the repair or replacement within not longer than 12 weeks after the date of the written claim.
- 4) The warranty period will be increased by the time needed for the repair.
- 5) The replaced or repaired parts of equipment will be included a warranty of the Seller or the Producer.
- 6) During the warranty period, the Seller undertakes a maximal service response time within 3 working days after the date of the written claim.

16.3. Terms of payments

Payment will be effected in the following way:

1. 60% of the contract value – (the value from the offer) – payable at delivery by the bank transfer to the Seller's account on the basis of an original invoice and shipment documents after signing the preliminary acceptance test by both parties of the Contract.
2. 40% of the contract value – (the value from the offer) – payable by the bank transfer to the Seller's account on the basis of an original invoice within 21 days after signing the final acceptance protocol by both parties of the Contract.

The Buyer shall pay to the Seller due amount for the subject of this contract by transfer to the Seller's account in:

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All bank charges in Poland are at the Buyer's account and bank charges outside Poland are at the Seller's account.

16.4. Delivery instruction

- 1) Subject of the Contract is to be shipped to the address below and placed at the disposal of the Buyer.
Shipping address: Instytut Technologii Elektronowej
Al. Lotników 32/46
02-668 Warsaw, Poland
- 2) The Seller advises to the Buyer about the dispatch by fax (No.+48 22 54-87-803).
- 3) The Seller will deliver CE certificate together with subject of the Contract.

16.5. Acceptance of the subject of the contract

Start-up of the system includes technical lunch and performing of the functional tests confirming technical parameters of the system according to technical specification and requirements indicated in this Terms of Reference. Acceptance of the subject of the contract will be done by signing by the Seller and by the Buyer final acceptance protocol.

16.6. Setting of disputes

All disputes arising from the present Contract, failing amicable settlement shall be resolved by the Arbitration Court of the Polish Chamber of Commerce in Warsaw in accordance with the rules of this Court.

17. Requirements concerning the security on due performance of the contract: we do not require.

18. Procedure for additional explanations.

Contractor is authorised to address only in written form the Awarding Entity (e-mail is also allowed) with request for additional information regarding the content of this Terms of Reference. The Awarding Entity will respond all the inquiries promptly, provided that such inquiries are submitted no later than 6 days prior to the deadline for submission of the tenders. The questions and the answers will be published on web site of the Awarding Entity.

19. Information on legal protection measures available to an the contractor during the contract award procedure.

Contractor's legal protection laws are included in Chapter VI of the Public Procurement Law of January 29, 2004 which is available on the Public Procurement Office (PPO) web site: www.uzp.gov.pl

20. Other matters.

For all matters not regulated in this Terms of Reference, the provisions of Public Procurement Law of January 29, 2004 will apply.

Zbigniew Poznański
Deputy Director ITE

Appendix 1

Requirements and technical parameters of the system for Reactive Ion Etching with Inductively Coupled Plasma (ICP) Sources.

No	Parameter	Requirement	The column to the fulfilment by the Tender*
1	2	3	4
1.	Type		specify
2.	Production year	2009	confirm
3.	Country of manufacturer		specify
4.	Manufacturer		specify
5.	System	Brand-new, not used in any laboratory and not shown at conferences, shows or fairs.	confirm
6.	General requirements	The equipment is dedicated to selective, controlled, reproducible etching process of epitaxial heterostructures and substrates based on AIIIBV and dielectrics films.	confirm
7.	Types of processes	The equipment is dedicated to etching process of epitaxial heterostructures e.g. AlGaAs, AlAs, AlGaSb, InGaAs, InAs, InGaSb, InAlAs, InAlSb, GaAs, GaSb, InP on the substrates: GaAs, GaSb, InP and dielectrics films, e.g. SiO ₂ , Si ₃ N ₄ and Al ₂ O ₃ .	confirm
8.	Aluminium process chamber	With pumping flange with diameter above 150 mm for very high effective pumping speed.	confirm
		There should be no further sealing or welding inside the process chamber.	confirm
		The chamber has to be heated.	confirm
		Front flange with viewport (40 mm diameter or more).	confirm
9.	Footprint of the ICP – RIE system	Smaller than 80cm(W)x200cm(H)x170cm(L).	confirm
10.	System console	With control components integrated in the frame.	confirm
		The console should contain the turbo pumps and the valves.	confirm

11.	Substrate electrode for 2-inch wafers with cooling	Regulation of substrate electrode temperature: -150°C up to +400°C.	confirm
		Regulation of substrate electrode temperature: +5°C up to +70°C, water cooled.	confirm
		RF power source (13.56 MHz).	confirm
		Electrode diameter 200– 220mm.	confirm
		Aluminium dark space shield (on ground potential).	confirm
		The possibility of etching process on wafers with size from 5mmx5mm up to 2" as well as irregular shape wafers.	confirm
12.	Plasma generation	RF power source 13.56 MHz and automatic tuning with power above/equal 300 W.	confirm
		Control of forward power or the self bias.	confirm
		The start positions of the capacitors of the matching units can be independently selected for each process step.	confirm
13.	Inductive Coupled Plasma Source optimized up to 2" wafers	Source diameter 60 - 70 mm optimized for 2" wafer.	confirm
		Power up to 600W.	confirm
		Electrostatic shielding.	confirm
		RF generator 13,56 MHz with automatic tuning.	confirm
		25 mm flange in the top electrode for installation of laser interferometer.	confirm
14.	Dedicated vacuum system for the process chamber	The base pressure $\sim 4 \times 10^{-6}$ mbar.	confirm
		The time to obtain of base pressure is ≤ 5 min.	confirm
		Automatic control of base pressure and the pressure during etching process.	confirm
15.	Gas supply system	Eight gas lines with valves and mass flow controllers (MFC) for Cl ₂ , N ₂ , CH ₄ , O ₂ , H ₂ , Ar, SF ₆ , and CF ₄ .	confirm

16.	Load – lock chamber	Square transfer load – lock for wafers transfer. The installation of other process modules must be possible in the future.	confirm
		The volume of the transfer chamber is smaller than 15 litres.	confirm
		The possibility of transfer of 5mmx5mm up to 2" wafers with different shapes.	confirm
		Dry pump and turbomolecular pump.	confirm
		Vacuum gauge equipped.	confirm
17.	Scrubber	A dry scrubber suitable for the above gases must be included.	confirm
18.	Additional scrubber	For Cl ₂ gas line (from safety valve of Cl ₂ pressure regulator).	confirm
19.	Laserinterferometry system for in situ monitoring of etching process	System with CCD camera and XY table for viewing the surface of measured structure.	confirm
20.	Computer control	Computer control with dedicated control software running under Windows XP Pro.	confirm
21.	PC computer with LCD monitor	Processor: Intel Core 2 Duo, min. 2.33GHz, 4 MB cache Memory: min. 2 GB Graphics card: min. 512MB Hard disks: min 2x160 GB DVD ± RW drive Windows XP Pro 19" LCD monitor Keyboard, Mouse, network card.	confirm
22.	Two steps acceptance test: a) Preliminary acceptance test in supplier b) Final acceptance test in IET after installation and start of the system	Demonstration of etching processes according to appendix 1.1. Check the selectivity of etching process for different masks and the process repeatability.	confirm
23.	Delivery period not longer than 24 weeks	ensured	confirm
24.	Process training of three persons held at the site of the Awarding Entity	ensured	confirm
25.	Operating manual and technical documentation (in Polish or in English)	ensured	confirm and specify

26.	All spare parts accessible within 10 years after the date of installation	ensured	confirm
27.	Ensuring the certainty of the after warranty service within at least 10 years	ensured	confirm
28.	Ensuring the certainty of the technical and process support within at least 10 years	ensured	confirm
29.	Warranty period at least 12 months	ensured	specify

*** Imprecise or inaccurate fulfilment of the table in the column 4 will result in rejection of the offer.**

Acceptation tests :

No.	Process	Structure	Parameter	Conditions and expected results
1	Shallow mesa etch	Multilayer structures: (Al)GaAs/GaAs (In)GaAs/(In)AlAs InAs/InGaSb InP	Etch depth	1 μm
			roughness	< 10 nm
			Anisotropic etching	profile angle 90+/- 3°
2	Deep mesa etch	Multilayer structures: (Al)GaAs/GaAs (In)GaAs/(In)AlAs InAs/InGaSb InP	Etch depth	7 μm
			Anisotropic etching	smooth sidewalls 90+/- 3° profile
3	High aspect ratio etch	Multilayer structures: (Al)GaAs/GaAs (In)GaAs/(In)AlAs InAs/InGaSb InP photonic crystal (circular and rectangular shape)	Etch depth	7 μm
			Pattern	$\phi/d \geq 0,6 \mu\text{m}$
			Anisotropic etching	profile angle 90+/- 3°
			Etch depth	7 μm
4	Anisotropic etch with 45° sloped wall	Multilayer structures: AlGaAs/GaAs structure	Etch depth	20 μm

.....
address stamp of the contractor

.....
/date/

S T A T E M E N T

DELIVERY OF THE SYSTEM FOR REACTIVE ION ETCHING WITH INDUCTIVELY COUPLED PLASMA (ICP) SOURCES

for Instytut Technologii Elektronowej
Al. Lotników 32/46, 02-668 Warsaw, Poland

Acting in accordance with the contract award procedure, we certify that we fulfill the requirements specified in Article 22 paragraph 1 of Public Procurement Law, which states that eligible to compete for a contract shall be economic operators who:

1. are authorised to perform specific activities or actions, if such authorisations are required by the law;
2. have the necessary knowledge and experience, and have at their disposal the technical potential and personnel capable of performing the contract; or present a written commitment of other entities where the technical potential and personnel capable of performing the contract is made available to them;
3. are in a financial and economic situation ensuring the performance of the contract;
4. are not liable to exclusion from the award procedure.

.....
/signature of authorised representative/

**DELIVERY OF THE SYSTEM FOR REACTIVE ION ETCHING WITH INDUCTIVELY COUPLED
PLASMA (ICP) SOURCES**

for Instytut Technologii Elektronowej,
Al. Lotników 32/46, 02-668 Warsaw, Poland

**List of the component tasks of the order that the Tender intends to assign to
subcontractors**

(in case no such tasks please fill in with dashes)

No.	The scope of contract, which the Tender intends to assign to subcontractors.
1.	
2.	
3.	
4.	
5.	

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/signature of authorised representative/