

**DKZ/64/2009**

**Date: Warsaw, 03.07.2009**

### 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 REACTIVE ION ETCHING DEVICE (RIE)**  
**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 **reactive ion etching device (RIE)**, hereinafter called “**device**”.

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 20 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 5 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](mailto: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 30 000,00 PLN (say: thirty 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) Conditions of warranty,
- g) 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 10<sup>00</sup> am, on **18<sup>th</sup> August 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 18<sup>th</sup> August 2009 at 10<sup>15</sup> 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 10<sup>15</sup> am, on 18<sup>th</sup> August 2009.**

### **OFFER FOR: DELIVERY OF THE REACTIVE ION ETCHING DEVICE (RIE)**

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 device according to 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 2 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 - 100%

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 100.

**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 equipment delayed 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, but no longer than "warranty period included in the offer" + 3 months from the date of delivery
- 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 2 working days after the date of the written claim.

## 16.3. Terms of payments

Payment will be effected in the following way:

1. 80% 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 and shipment documents within 7 days after shipment of the subject of the Contract, after performing the preliminary acceptance test at Seller's site and signing the preliminary acceptance test protocol by both parties of the Contract .
2. 20% 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 performing the final acceptance test at Buyer's site and signing the final acceptance test 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:

.....  
.....

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

1. The preliminary acceptance test of the subject of the Contract will be performed at the place of its origin in the presence of the Buyer and Seller representatives before dispatching the goods. The preliminary acceptance test procedure will be based on assessment of the results of the functional tests confirming technical parameters of the system according to technical specification and requirements indicated in this Terms of Reference as well as performing below mentioned tests:
  - a) Etching of SiO<sub>2</sub> layers:
    - etching velocity:  $\geq 50\text{nm}/\text{min}$ .
    - profile angle of etching:  $90^\circ \pm 3^\circ$

- process stopped on the sapphire basis.
- b) Etching of ZnO layers:
  - etching velocity: 25-100nm/min.
  - etching depth: 1 µm
- c) Etching epitaxial layers MAX (Ti<sub>3</sub>SiC<sub>2</sub>; Ta<sub>2</sub>SiN) with small thickness
  - etching velocity: 25-100nm/min.
  - etching depth: 20-300nm
  - process stopped on the silicon/SiC basis.
- d) Etching Si<sub>3</sub>N<sub>4</sub> layers:
  - etching velocity: 50-100nm/min
  - etching depth: up to 1 µm
  - profile angle of etching: 90°±3°
  - process stopped on the GaN basis.
- e) Removal of photoresists from samples surface.
- f) Selective removal of oxide masks (e.g. SiO<sub>2</sub>) from samples surface.

The results of the acceptance test must be accepted by signing by the Seller and the Buyer preliminary acceptance test protocol.

2. The final acceptance test will be performed after delivery, installation and start up of the subject of the Contract. The final acceptance procedure will be assessment of the results of the tests and processes mentioned in §16.5 item 1.  
The results of the final acceptance test must be accepted by signing by the Seller and the Buyer the final acceptance test 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](http://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 No. 1**

**Requirements and technical parameters of the reactive ion etching device (RIE).**

<b>Lp.</b>	<b>Parameter</b>	<b>Requirements</b>	<b>Column to fill by tenderer *</b>
1	2	3	4
<b>1.</b>	Type of device		specify
<b>2.</b>	Production year	2009	confirm
<b>3.</b>	Manufacturer		specify
<b>4.</b>	Country of origin		specify
<b>5.</b>	The device	Brand-new	confirm
<b>6.</b>	Type of processes	Preparing and structurization base surface in-situ, with dry etching technology. Photoresists and masks removal from etching surfaces.	confirm
<b>7.</b>	Reaction Chamber	Aluminium process chamber enabling etching layers on wafers: a) 4" diameter size b) and on irregular shape wafers of minimum 5mmx5mm area.  Chamber flange with viewport for plasma observation. Enabled access to reaction chamber.	confirm
<b>8.</b>	Plasma Source	RF generator (13,56MHz), equipped with automatic matching unit. Maximum power: 300W, controlled in range : 20-300W	confirm
<b>9.</b>	Pumps	a) System ensured vacuum value: 1,2E-06 bar. b) pumping speed: ≥400l/sek. c) rotary and turbomolecular pumps d) corrosive gases resistant. e) automatic pressure control and measurement system.	confirm
<b>10.</b>	Electrode	a) aluminium electrode b) water cooled electrode c) with cooling/heating system (chiller): 0-70°C connected during installation d) enabled possibility of periodical cleaning the electrode and area around the electrode	confirm
<b>11</b>	Gas lines	a) reaction gasses: CF <sub>4</sub> , O <sub>2</sub> , Ar, CH <sub>4</sub> , H <sub>2</sub> , SF <sub>6</sub> b) 6 gas lines c) equipped with MFC. d) corrosive gases resistant.	confirm

12	Software	RIE device control software and all special applications added to the device, must work under Windows XP Pro System, must be compatible with other standard programs of Microsoft Windows System and ensure RIE operation together with Oxford Instruments ICP system.	confirm
13	The PC Computer with LCD monitor	Processor: Intel Core 2 Duo, min. 2.33GHz, 4 MB cache RAM: min. 2 GB Graphic Card: min 256 MB HDD: : min 160 GB (SATA) Optical Drive DVD $\pm$ RW (SATA) System :Windows XP Pro monitor LCD min.19", keyboard, mouse, network card	confirm
14	Control process system	RIE device equipped with end point detection (EPD) system	confirm
15	Exhaust treatment	Ensured scrubber for gases mentioned at point 11.	confirm
16	Interface	Ensured connecting the device, during installation, to transfer loadlock of ICP device, produced by Oxford Instruments company installed in the Awarding entity laboratory. Transfer loadlock type: four-position model TS2/VS, flange with possibility of connection another module is rectangle with external dimensions: 13x34cm, according to the scheme attached to the Terms of Reference.	confirm
17	Two-step acceptance test	The preliminary acceptance test will be performed at producer facility and will include following tests of etching: 1. Etching of SiO <sub>2</sub> layers: - etching velocity: $\geq 50$ nm/min. - profile angle of etching: $90^\circ \pm 3^\circ$ - process stopped on the sapphire basis. 2. Etching of ZnO layers: - etching velocity: 25-100nm/min. - etching depth: 1 $\mu$ m 3. Etching epitaxial layers MAX (Ti <sub>3</sub> SiC <sub>2</sub> ; Ta <sub>2</sub> SiN) with small thickness - etching velocity: 25-100nm/min. - etching depth: 20-300nm - process stopped on the silicon/SiC basis. 4. Etching Si <sub>3</sub> N <sub>4</sub> layers: - etching velocity: 50-100nm/min etching depth: up to 1 $\mu$ m - profile angle of etching: $90^\circ \pm 3^\circ$ - process stopped on the GaN basis. 5. Removal of photoresists from samples surface.	confirm

		6. Selective removal of oxide masks (e.g. SiO <sub>2</sub> ) from samples surface.  Final acceptance test will be performed at the Awarding entity facility and will include all above mentioned tests of etching. All tests samples will be delivered by the Awarding entity.	
18.	Deadline for completion of the tender including installation, start up and testing	maximally to 20 weeks after signing the Contract	specify time of completion of the tender
19	Free of charge operation and maintenance training for two persons at the Awarding entity site	Two-step training: - first step after device installation - second step 3 months after final acceptance test.	confirm
20.	Operating manual, programming instruction and technical documentation in English	ensured	confirm
21	Spare parts for the period of warranty	ensured	specify the list of spare parts
22.	All spare parts accessible	ensured within at least 10 years after the date of installation	confirm
23.	Software upgrades free of charge	ensured within the minimum 5-year period after the date of installation	confirm
24.	Post warranty service	ensured within 10 years after the date of installation	confirm
25	Technical and process support	ensured within at least 10 years after the date of installation	confirm
26.	Warranty period	at least 12 months	specify the warranty period
27.	Installation requirements	ensured	specify installation requirements

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

.....  
address stamp of the contractor

.....  
/date/

## **S T A T E M E N T**

### **DELIVERY OF THE REACTIVE ION ETCHING DEVICE (RIE)**

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 REACTIVE ION ETCHING DEVICE (RIE)**  
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.	

.....  
*/signature of authorised representative/*