

DKZ/19/2009

Date: Warsaw, 20.03.2009

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 ETCHING WITH USE OF FOCUSED ION BEAM (FIB)
CPV 38511000

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 etching with use of focused ion beam (FIB)**, 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 6 months 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

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 100 000,00 PLN (say: hundred 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 4th 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 4th 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 4th May 2009.**

OFFER FOR:

DELIVERY OF THE SYSTEM FOR ETCHING WITH USE OF FOCUSED ION BEAM (FIB)

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 4 persons held at 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 - 70%
- Quality of the system - 30%

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 70.

14.2 For the quality of the system: number of points in the price criteria will be calculated according to filled table (appendix No 1 to the Terms of Reference) and the following formula:

$$Q_n = \left(\sum_p (0, 1, 5)_p \right)_n / \max_p \left(\sum_p (0, 1, 5)_p \right)_n * 100 * W$$

- where: Q_n - points in quality criteria
 $(0, 1, 5)_p$ - values of points admitted by the Tender Committee for the evaluation of the p-th parameter
p - number of evaluated parameters
n - number of the offer
W - weight of the “Quality” criteria.

Maximum number of points to be gained within the quality criteria is 30.

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.

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 by the bank transfer to the Seller’s account on the basis of an original invoice and shipment documents within 14 days after shipment of the subject of 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:

.....

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

Requirements and parameters of the system for etching with use of focused ion beam (FIB)

No	Name of parameter	Requirement	The column to be fulfilled by the Tender*	Points
1	2	3	4	5
1.	Model and type		specify	
2.	Production year	2009	confirm	
3.	Manufacturer		specify	
4.	Country of manufacturer		specify	
5.	System condition	Brand-new, not used in any laboratory and not shown at conferences, shows or fairs	confirm	
6.	Type of system	Fully functional system for etching/milling and deposition with use of focused ion beam, controlled digitally by computer software installed on the PC-class computer and operating in Windows XP environment, together with following equipment and given parameters	describe	
7.	Columns	Dual Beam system with ion column and electron column	confirm	
8.	Vacuum system	Oil-free vacuum system	confirm and describe	
	Ion column:			
9.	Ion source	Liquid Gallium ion emitter with necessary ion beam optics	confirm and describe	
10.	Acceleration voltage	Acceleration voltage (V_i) controlled in the range between maximum value of at least 30 kV and minimal value not greater than $V_{i \min} = 1\text{ kV}$. Scored minimal acceleration voltages: a) $V_{i \min} = 1\text{ kV}$ b) $500\text{ V} < V_{i \min} < 1\text{ kV}$ c) $V_{i \min} \leq 500\text{ V}$	specify	a) 0 point b) 1 point c) 5 points
11.	Resolution	At least 5 nm @ $V_i = 30\text{ kV}$	specify	
12.	Magnification	Maximum magnification at least 300 000x (in case of 19-inch image-display)	confirm and describe	
13.	Ion-beam current	Ion beam current controlled in the range of at least 2 pA - 20 nA	confirm and describe	
	Electron column:			
14.	Electron source	Schottky thermal field-emission electron source	confirm and describe	
15.	Accelerating voltage	Accelerating voltage (V_e) continuously adjustable in the range of at least 500 V-30 kV	confirm and describe	

16.	Magnification	Maximum magnification at least 500 000x (in case of 19-inch image-display)	confirm and describe	
17.	Resolution in SE (secondary electron) mode, guaranteed at installation site	At voltage $V_e = 15$ kV at least $x = 1.2$ nm (for test structure Au/graphite at optimal work distance - give work distance for each resolution). Scored resolutions: a) $x = 1,2$ nm b) $1,0 \text{ nm} \leq x < 1,2$ nm c) $x < 1,0$ nm	specify	a) 0 point b) 1 point c) 5 points
		At voltage $V_e = 1$ kV at least 2.5 nm (for test structure Au/graphite at optimal work distance - give work distance for each resolution). Scored resolutions: a) $x = 2,5$ nm b) $1,5 \text{ nm} \leq x < 2,5$ nm c) $x < 1,5$ nm	specify	a) 0 point b) 1 point c) 5 points
18.	Resolution of images created by transmitted electrons (STEM detector), guaranteed at installation site	At voltage $V_e = 15$ kV at least 1.5 nm. Scored resolutions: a) $x = 1,5$ nm b) $1,0 \text{ nm} \leq x < 1,5$ nm c) $x < 1,0$ nm	specify	a) 0 point b) 1 point c) 5 points
19.	Electron-beam current	Maximum electron-beam current at least 20 nA	specify	
	Others:			
20.	Deposition of layers	Deposition of layers possible with ion beam and with electron beam	confirm	
21.	Separated Gas Injection Systems (GIS) for precise injection of gases	a) System equipped with at least five separated Gas Injection Systems (GIS) used for precise injection of gases, enabling: 1. platinum (Pt) deposition 2. tungsten (W) deposition 3. deposition of insulator material 4. enhanced etching of insulator materials with use of ion beam 5. enhanced etching of carbon based materials (e.g. resists) with use of ion beam b) Single GIS should be used for precise injection of gases for one aim c) Installed system ready for injection of gases (delivered with filled crucibles)	confirm and describe	
22.	GIS control	Each GIS controlled independently from the main user interface	confirm and describe	
23.	Chamber	System chamber enabling operation for semiconductor wafers with 150 mm diameter with full displacement capabilities (access to each point of the wafer surface)	confirm and describe	
24.	CCD camera	Infrared CCD camera for viewing stage and chamber	confirm and describe	
25.	Stage	Motorized stage enabling X, Y, Z movements, tilts and rotations of specimen, with possibility of recording particular stage positions and automatized return to these recorded positions.	confirm and describe	
26.	Stage movement, tilt and rotation	Stage movement range: X:, Y: at least 150 mm, Z: at least 10 mm; rotation 360° , tilt in the range of at least $-5^\circ - 60^\circ$.	confirm and describe	

27.	Precise stage movement	Required laser stage or piezo stage (in full X,Y movement range), enabling precise movement of specimen in three directions (X,Y,Z). Stage enabling X and Y movement with minimal step not bigger than 100 nm.	confirm and describe	
28.	Image detectors	Observation of specimens with images generated by ion beam (SE and SI) and electron beam (SE, BSE, STEM). System should be equipped with at least the following image detectors: 1. Secondary electron detector 2. In-lens detector of secondary electrons and backscattered electrons 3. Transmitted electron detector (STEM) 4. Secondary ion detector	confirm and describe	
29.	Digital recording of images	System enables digital electronic recording of images with maximal resolution at least 10 megapixel and at least 16-bit grayscale, and saving them as TIFF, BMP and JPEG files.	confirm and describe	
30.	Charge neutralization	System enables ion etching/milling of various materials, among them insulators, in their natural condition and without initial preparation. Positive charge created during etching can be neutralized regardless type of material and rate of etching.	confirm and describe	
31.	Micromanipulation of TEM specimens	System equipped with dedicated micromanipulator enabling preparation of TEM specimens in the chamber (placement of thin foils onto grid for TEM examination), with own, independent control system (independent from other micromanipulators) and exchangeable needle for holding of TEM samples	confirm and describe	
32.	Micromanipulators for manipulation in nanoscale	System equipped with at least two additional micromanipulators (for manipulation on specimen surface at micro- and nano-scale and electrical probing), controlled electrically and driven by piezo element, each manipulator with maximum drift not bigger than 1 nm/min	confirm and describe	
33.	Automated, unattended etching of multiple TEM samples	Software allowing for automated and unattended (without presence of an operator) sequenced etching of multiple TEM samples	confirm and describe	
34.	Beam control and module for lithography	16-bit resolution of ion beam and electron beam control and digital pattern generation for lithography with electron and ion beams	confirm and describe	
35.	Usage of imported bit maps	Enables usage of etching/deposition patterns from imported bit maps	confirm and describe	
36.	Software for size measurements	Software enabling interactive measurements of sizes and distances between specific points directly on screen, with results being automatically recorded	confirm and describe	
37.	Water cooling system	Circular water cooling system with parameters/conditions compliant with the microscope requirements	confirm and describe	
38.	Uninterruptible power supply (UPS)	System equipped with uninterruptible power supply (UPS)	confirm and describe	
39.	Documentation	Operating manual and technical documentation (full in English, shortened in Polish)	confirm	
40.	Consumable parts	Consumable parts for 12 months	list	
41.	Installation of the system	Installation requirements	specify and describe	
42.	Acceptance tests	Start up of the system and acceptance tests at the Purchaser's site	confirm	
43.	Delivery period	Delivery period not longer than 6 months	specify	

	Warranty service:			
44.	Warranty period	Warranty period at least 24 months	specify	
45.	Service response time	Maximal service response time – 3 working days	confirm	
46.	Period of repair	Period of repair possible to be carried out at the Purchaser's site should not exceed 10 days	confirm	
47.	Training	Basic operation and maintenance training of 4 persons at the Purchaser's site	confirm	
48.	Service	Free of charge service of the microscope including necessary adjustments, repairs and replacements of the worn-out parts after each year of the warranty period	confirm and describe	
	After warranty service:			
49.	Servicing company	Entire system under service of the company with site on the territory of Poland	confirm and describe	
50.	Spare parts	All spare parts accessible within 10 years after the final date of warranty service	confirm	
51.	Software upgrade	Software upgrade free of charge within the minimum 5-year period after the date of installation	confirm	
52.	Servicing contract	Ensuring the certainty of entering into a servicing contract on the Purchaser's demand	confirm and describe	
53.	After warrant service	Ensuring the certainty of the after warranty service within at least 10 years	confirm	
54.	Technical support	Ensuring the certainty of the technical support within at least 10 years	confirm	

* Imprecise or inaccurate fulfillment of the table in 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 SYSTEM FOR ETCHING WITH USE OF FOCUSED ION BEAM (FIB)

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 ETCHING WITH USE OF FOCUSED ION BEAM (FIB)

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/