

EXPLANATION OF THE TENDER DOCUMENTATION

Contracting Authority	Fyzikální ústav AV ČR, v. v. i.
Seat	Na Slovance 1999/2, 182 21 Praha 8, Czech Republic
Identification No.	68378271
Public Contract name	PVD deposition system / PVD depoziční zařízení
Registration Number	Z2020-006421
Project name and No.	Solid state physics for the 21st century, Reg. No. CZ.02.1.01/0.0/0.0/16_019/0000760
Type of public contract	above-threshold public contract for supplies
Type of procurement procedure	open procedure pursuant to Section 56 of the Act No. 134/2016 Coll., on Public Procurement, as amended (hereinafter the "Act")

The Contracting Authority responds to the questions of a supplier delivered on 26 and 28 February 2020 by e-mail.

Question 1

stainless steel vacuum chamber

- with mainly CF flanges -???

Are the CF flanges absolutely necessary? The request to vacuum is not so high!

Answer

The Contracting Authority insists on this specification.

Question 2

load-lock for 4" substrate allowing also another vacuum chamber to be connected – Does it mean that there should be an optional port allowing connection of other process chamber in future?

Answer

Yes, it does. As requested, the load-lock has to allow another vacuum chamber to be connected. We expected the realization as one load-lock which allows connection and transfer to two



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vacuum systems. It can be realized as another, i.e. second, load-lock but it has to allow, in accordance with the text of the "Purchase contract", another vacuum chamber to be connected.

Question 3

custom substrate carrier that accommodates multiple 10x10 mm² samples – How many? We need to know min. and max. number of substrates per a run?

Answer

The minimum number is 16. If more samples can be placed, the better.

Question 4

What is the difference between "PVD magnetron sputtering sources" and "PVD cluster source", see paragraph 11 and 12 of this technical specification? "Klastrový zdroj" znamená co? (What does it mean "Klastrový zdroj"?)

Answer

An example of an applicable cluster resource specification is available e.g. at <http://www.oaresearch.co.uk/oaresearch/cluster/>.

For further details you can search for "Sputter Gas Aggregation Source" for example here: De Toro, J. A., Normile, P. S., & Binns, C. (2017). Types of Cluster Sources. Gas-Phase Synthesis of Nanoparticles, 39–55. doi:10.1002/9783527698417.ch3

Question 5

Substrate material - ?

Answer

various – Si/SiO₂ wafers, glass, metals, polymer composites etc.

Question 6

Substrate pre-treatment (etching)?

Answer

We intend to use substrate (even nonconductive one) etching prior to deposition. For this purpose, in the "Purchase contract" Annex no. 1, #14 we have "one RF min. 100 W generator with auto-matching network for substrate biasing" to realize it.



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Another realization is also possible but we insist on RF biasing for other purposes.

Question 7

Rotation speed of substrate holder?

Answer

It has to be so that other parameters (homogeneity) is reached.

Question 8

Number & **kind** of gas lines (e.g. Ar)?

Answer

In accordance with the "Purchase contract", Annex no. 1, #19: 4 mass flow controllers to control gas flow, flowmeter calibration and specific sccm ranges will be specified to successful bidder within the Contract.

Question 9

Coating materials (e.g. Au, SiO₂)?

Answer

Metals like Au, Ti, oxides and nitrides like SiO₂, MeO_x, Si₃N₄, and carbides like SiC, DLC etc.

Question 10

Layer stack and individual thickness (nm)?

Answer

From nm to um.

Question 11

Maximum edge shadow (mm)? Normally this is 3-5 mm.

Answer

We can accept this value over 4" wafer. For smaller samples down to 1-2 mm is preferred.





Question 12

What does the Contracting Authority mean by “based on plasma assisted physical vapor deposition”? Magnetron sources already use (by default) plasma as a complement to the deposition process.

Answer

We understand it the same way, we present it within the specification to avoid possible misunderstandings.

Question 13

There is no indication what the transport route and the final location of the equipment will be. The equipment is heavy - weighs around two tons (overall). In addition, it needs cooling water with a temperature of about 20-22 degrees, compressed air (about 6 Bar) and a fairly clean environment.

Answer

We are aware of and meet the infrastructure requirements. As for access to the laboratory where the equipment is to be installed, the transport passway is limited by the frame size 90x197 cm of the smallest door. There are also 9 steps (elevation change 154 cm) on the way. For details, see the annexes “Transport_passway.pdf” and “Plan_of_building.pdf” of this document.

The Contracting Authority **extends the deadline for submission of bids** in accordance with Section 99 of the Act.

The Contracting Authority therefore modifies the terms of reference, namely the first sentence of Clause 2.2 of the Tender Documentation which is now valid as follows:

2.2 Bids shall be submitted no later than on **March 27, 2020 by 11:00 am.**

This extension of the deadline for the submission of bids corresponds to the explanations and supplementation above.

In Prague



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