Institut "Jožef Stefan", Ljubljana, Slovenija
1001 Ljubljana, p.p. 3000 / Jamova cesta 39 / Tel. n.c. 477 39 00, Fax: 423 54 00

FORM 4.2

TECHNICAL SUITABILITY STATEMENT

We hereby declare that we can provide the equipment with the required technical suitability in line with all the technical requirements included in the tender documentation.

TECHNICAL CHARACTERISTICS:

general characteristics:

1. Electron beam evaporator; versatile, research grade machine
2. Multiple sources
3. Easy access, easy loading and easy maintenance
4. Upgradable
5. Applications: Lift off, nanolithography, microfabrication

system requirements:

6. required base vacuum (mbar): _10-6mbar@1h_____ (better than 10-6 mbar; high vacuum)
7. materials to be evaporated: Au, Al, Pd, Pt, Ni, Cr, Ti, Nb, Ta, Mo, Si
8. sequential deposition of different metals in a same vacuum process
9. metal film thickness: ____1 nm – 200 nm_____ (1 nm – 200 nm)
10. deposition rate:____0.1-10 Å /s _____ (2.5 Å /s)
11. thickness uniformity:_____5 %_____ (5 %)

chamber:

12. vacuum grade stainless steel or aluminum
13. viewport with mirrors for visual control
14. deposition shields for easy system cleaning

vacuum:

15. turbo pump:___1500 L/s_____ (medium size ~700L/s preferred; pump time of few hours acceptable)
16. pre-pump
17. vacuum gauge

system:

18. manual operation and control is acceptable
19. thickness/Rate "controller" with recipe storage, end of process by setting thickness
20. quartz crystal sensor for thickness and rate control
21. source shutter for starting/stopping deposition
22. power supply, control cabinet

evaporation source:

23. e-beam power:__6 kW_____ (6kW or more)
24. multiple pocket source: ___4 pockets_____(4 pockets)
25. pocket size: ____30 mm x 15 mm, 30°cone_____ (3cc or 4cc)
26. deflection of electron beam: __270°_____ (270°)
27. ebeam sweep unit
28. manual pocket changing

substrate stage:

29. minimum stage size:___2" wafer or small pieces 10 x 10 mm2_____ (2" wafer or up to 9 x 10x10mm2 samples; custom holders, clips, to easy mount 2" wafer or smaller pieces)

30. maximum sample temperature for lift-off applications: ___<50°C_____ (limited to 40°C; for any metal, including Mo, Ta...)
31. sufficient working distance between source and samples:____600 mm_____ (at least 35cm, configured for lift-off applications)

OTHER REQUIREMENTS:

32. The equipment must be CE compatible
33. Documentation and manuals must be included
34. Price must include delivery charges, installation or system startup and training at the customer's location for at least 2 days; offer should include all costs connected with traveling and accommodation
35. demonstration of successful lift-off:____50 nm at 50 nm_____ (of 50nm thick Au film at 50nm pattern resolution)
36. demonstration:____5%_____ (of 5% uniformity using one material)
37. dimension and weight limits: width ____max 1.4 m_____ (1.4m max), height ___max 2 m _____ (2m max), weight __max 500 kg_____ (500kg max)
38. possibility of upgrade with ion source gun and joint vacuum chamber.
39. Test reports to demonstrate vacuum and substrate heating. No oxidation should be present at interfaces.
    Deposition of 50 nm Si on ~5 nm Ti buffer layer on provided substrate.
    50 nm Al on ~5 nm Au/Pd buffer layer on provided substrate.
40. servise response time must be available within ___2 days_____ (7 max) days after notification of a malfuction
41. remote help by phone or electronic mail
42. Warranty and Out-of-warranty support:
    - Warranty: _____2 years_____ (at least 2 year)
    - After expiration of the limited warranty the provider must provide Out-of-warranty support: _____10 years_____ (for at least 10 years after the purchase date)
    - A replacement parts and services for all the items in this tender, and the customer shall pay for all the expenses and charges associated with out-of-warranty services. No used or rebuilt systems accepted.

- **upgrade options**

The offer should include the following upgrade options:

43. load lock pre-chamber for fast loading/unloading the samples, compatible with CF40 feedthrough for vacuum transfer YES
44. substrate stage tilt/rotation YES
45. substrate stage heating/cooling YES

This statement is an integral part of, and an annex to, the application to the public tender for the supply of **»SUPPLY OF A E-BEAM EVAPORATOR«**.

Vienna 22.05.19
(place, date)

(stamp)

PFEIFFER VACUUM
Pfeiffer Vacuum Austria GmbH
Diefenbachgasse 35, 1150 Vienna • Austria
Phone: +43 1 894 17 04 Fax: +43 1 894 17 07
office@pfeiffervacuum.at • www.pfeiffer-vacuum.com

The bidder:
(signature of the representative)

The contracting authority's note:
The applicant must specify the characteristic of the offered goods and write them down on a blank space and submit the suitable prospect documents or the confirmations from the producer of the goods to prove its statements and mark in these prospects the fulfilment of each characteristic.