



Institute of Physics

(An autonomous Research Institute of Dept. of Atomic Energy, Govt. of India)
P:O: Sainik School, Bhubaneswar – 751 005, India

GLOBAL TENDER NOTICE NO. 03/2008-09

Last date of receipt of the sealed quotations: Upto 3 P.M. of 27.11.2008

Sealed quotations are invited from leading manufacturers and / or their accredited associates for supply, installation, testing & commissioning of

- 1. ELECTRON CYCLOTRON RESONANCE (ECR) BASED ION SOURCE SYSTEM – 01 No.**
(The system should comprise of ECR Source & Low Energy Beam Transport System & Accessories.)
- 2. ARGON ION SPUTTER SOURCE – 01 No.**
- 3. SURFACE PROFILOMETER – 01 Set**

Detailed technical specifications and other terms & conditions for supply of the above equipments can be obtained by downloading the same from the Institute's official website: www.iopb.res.in . Quotations should be submitted in sealed envelopes in two parts separately, i.e. "Technical bid" (Part- A) & "Financial bid" (Part-B). Both the parts should be further sealed in an envelope super scribing the name of the Item.

The technical bid will be opened on 01.12.2008 at 11.00 AM. The price Bid of the only technically qualified bidders will be opened at a later date with prior intimation to the respective bidders.

The Institute reserves the right to accept or reject any or all quotations either in full or in part without assigning any reasons thereof.

REGISTRAR

TECHINICAL SPECIFICATION:

1) ELECTRON CYCLOTRON RESONANCE (ECR) based Ion Source-01 No.

High current Electron Cyclotron Resonance (ECR) based ion source, capable of delivering highly charged ions. The quoted system should include the following items.

ECR source (consisting of)

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- a) The source with permanent magnets (with movable base and alignment fixtures).
 - b) UHF generator (200 W at 10 GHz or higher, with necessary controls).
 - c) Pumps (dry type, with controllers).
 - d) Gas manifold for 3 gases (with controller and remote control valves).
 - f) Option for generating metallic ions.
 - g) Extractor power supply with remote control.
 - h) Source control under LABVIEW through optical fibers.

Low energy Beam transport system

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- a) Extraction system up to a retractable Faraday cup
 - b) Solenoid focusing with power supply.
 - c) Drift tubes
 - d) 90 deg analyzing magnet with power supply and control
 - e) Turbo molecular pumping system with valves and gauges
 - f) Retractable faraday cup (with controller)
 - g) X-/Y-slits with controls
 - h) X-/Y-Steerers with power supplies

General

The system should be complete with power supplies, controls for remote operation, cooling lines and cabling. It must deliver ion currents (at factory site) as per the table (in e uA) given below.

Q+	1	2	4	6	8	10	14	16
H	1500							
He	1500	200						
Ar	1000		260	90	80	5		
Xe							15	10
Ta					20			
Au			17	12	15	18		

The source is to be placed on an HV deck (300 KV) with the analyzing magnet (slits, Faraday cups pumps gauges etc) sitting at ground potential. The coupling should be using General purpose accelerating tubes. The magnet should be double focusing type with ME/z^2 of about 15 amu.MeV (with $B.rho = 0.55$ Tesla meter). In case there is a better option we may go for a smaller magnet sitting on the HV deck.

IOP will be willing to put manpower regarding optimization of optics and even providing beam line elements (including the analyzing magnet and PS) from local or other reputed international vendors. Quotation must therefore be prepared with and without this possibility.

2) ARGON ION SPUTTER SOURCE- 01 No.

UHV Ion source for surface cleaning to be operated with Argon gas

Ion energy: variable from 0.2 keV to 3 keV

Ion current: up to 15 micro ampere or better

Mounting: UHV 35CF flange

Gas inlet system with high precision leak valve

Required Power supply, cables, software and all other accessories.

3) SURFACE PROFILOMETER WITH ACCESSORIES: - 01 No.

Surface Profilometer for accurate characterization of film thickness, roughness, stress, and defects on samples. The details are here below.

1. Scan Method: Stylus (Sensor with sub-Angstrom resolution), precision scan stage, linear scan path and optically flat reference
2. Stylus size: 12.5 μm radius, 45 degree cone angle standard (optional styli should be available from 25 μm radius to 50 nm radius. High aspect ratio styli should also be available). Stylus, LIS 3, 2.5 μm radius, gray, color coded-type B should be coded as an optional item (in addition to the 12.5 μm stylus which comes as the base system)
3. Calibration standard should be quoted as an optional item (along with test report, etched Si wafer)
4. Vibration isolation table should be quoted as optional item
5. Scan Length: 50-60 mm (maximum)
6. Step Height Repeatability: 6 \AA , 1 sigma on 1000 \AA or 1 micron step
7. Stylus Exchange: Stylus should be held in sensor magnetically with kinematic mount (Quick-Change stylus replacement fixture should be included)
8. Vertical Range: 524 μm standard (1 mm extended vertical range should be quoted as optional)
9. Stylus force: 1-15 mg (down to 0.03 mg should be quoted as optional)

10. Sample Stage: 150 mm (6") sample stage with wafer alignment pins for 50 mm to 150 mm wafers
11. X-Y Sample Positioning: 100mm x 100mm X-Y translation (manual)
12. Optional motorized/programmable X-Y sample positioning (150mm x 150mm X-Y translation)
13. Sample stage theta: 360 degree rotation (manual positioning)
14. Step Detection: Should automatically measure up to 30 steps in a single scan
15. Database Software: Should be able to compare with the results from up to 200 scans (should provide mean and standard deviation with real-time plotting of results)
16. CCD Camera: Color 160x magnification video (optional 70x-280x zoom)
17. Computer: Pentium 4 (minimum configuration: 3.4 GHz, 1 GB RAM, HD 80GB) Operation under MS Windows XP platform. One 17" LCD monitor should be supplied as an integral part
18. Analysis Parameters should be clearly mentioned
19. Stress Measurement Option: Should include 3-point suspension stage to calculate thin film stress as either tensile or compressive (would be measured in Mpa)
20. 3D Scanning Option: Should enable 3D mapping of sample area with 1 micron minimum spacing between scan lines (with up to 200 3D map locations per program) and should include the analysis software. Should be quoted as an optional item.

Any other item(s) may be quoted as optional item(s).

Commercial Terms & Conditions:

1. Price:

The price required to be quoted on Ex-works and/or FCA (*inclusive of necessary export packing cost*). This does not include the applicable duties & taxes. The price quoted in the tender required to be quoted in ink, both in figures & words. In case of any Discrepancy, the rate quoted in figures will be accepted.

2. Price Validity: -

The price validity of the quotation should not be less than six months from the date of opening of the tender.

3. Specification and quantity: -

The specification as well as the configuration and quantity of the equipment are required to be strictly as per the requirement of the indenter.

4. Payment: -

The payment will be made against letter of credit (L/C). 90% of the L/C value will be released against successful delivery of the consignment at IOP site and balance 10% will be released after successful installation, commissioning of the system against submission of performance bank guarantee of equivalent amount valid for the entire warranty period. The bank guarantee required to be issued by a nationalized bank.

5. Bank charges: -

The bank charges inside India to the applicant account and outside India to the beneficiary account.

6. Warranty: -

The system required to be warranted against manufacturing and functional defects for 1 year or 15 months from the date of successful completion of installation, commissioning.

7. Liquidated damage: -

The liquidated damage is to be collected @ 0.5% of the total value per delayed week or part thereof or 5% (aggregate) of the total order value if such case arises.

8. Installation and testing: -

Installation and testing of the system at our site with your Instruments, accessories, tools & tackles; deploying appropriate manpower as required, at your cost.

9. Supply of spares:

Supply of spares should be ensured for at least for 3 years from the date of supply.

10. Experience:

Details of the client list for supplying similar type of instruments have to be submitted.

11. Agent:

An Indian agent, if any, who will participate in this Tender on behalf of one manufacturer, will not be eligible to present another manufacturer.

DIRECTOR