



Institute of Physics

(An autonomous Research Institute of Dept. of Atomic Energy, Govt. of India)

P.O: Sainik School, Bhubaneswar, Orissa- 751 005, India

GLOBAL TENDER NOTICE NO.: 06/2010-2011

Last date of receipt of the sealed quotations: Upto 3 P.M. of 21.02.2011

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

- 1. Electron Energy Analyser with MCP-CCD Data Acquisition System-01 Unit**
- 2. VUV Lamp with Monochromator - 01 Unit**

Detailed technical specifications and other terms & conditions for supply of the above items/ equipments can be obtained by downloading the same from the Institute's official website: www.iopb.res.in . All 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 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.

DIRECTOR

TECHNICAL SPECIFICATIONS:

I. *Electron Energy Analyser with MCP-CCD Data Acquisition System-01 Unit*

Upgradation of the existing Angle Resolved Ultra-violet Photoelectron Spectrometer (ARUPS)

Existing system

The existing Ultraviolet Photoelectron Spectrometer (UPS) which is equipped with facilities for doing both angle integrated as well as angle resolved valence band measurements, was installed during January, 2005.

Suppliers: M/s Omicron NanoTechnology UK.

System: Mu metal main chamber, Prepchamber both under 10^{-11} .

Analyzers: EA 125HR and AR65.

UV Lamp: HIS 13

5 axis Ominiax manupulator (20K), LEED in main chamber

Subsection {Upgrade required}

I. The EA125HR Omicron analyzer needs to be replaced (as a buy-back) with an analyzer with specifications similar to:

A. Modern fire wire, low noise digital CCD-MCP camera detection system (1300x1000 pixel) with a capabilities for simultaneous acquisition in 500 energy channels and 400 angular channels with minimum 70 frames per second with total noise counts for all energy channels less than 2 cps and average noise per channel less than 0.01 cps. Dynamic range per pixel should be less than 7 bit. Guaranteed energy resolution should be less than 3 meV at 2 eV pass energy and 20 eV kinetic energy.

B. *Wide angle acceptance lens for high throughput measurements with*

interchangeable slits

With following specifications:

Transmission mode lens acceptance: plus or minus 15 degrees

Angular resolution less tha 0.1 degree from 0.1 mm spot

Angle modes: $\pm 10^\circ$, $\pm 7.5^\circ$, $\pm 5^\circ$, $\pm 3^\circ$

Kinetic energy range: 0.5 eV to 1500 eV

45 mm working distance

40 mm diameter MCP detector system

Bakeable to 150 degrees C

C. Control and data acquisition software with the following.

Computer system

Windows based acquisition software

Free upgrades of the software for 10 years.

Extremely stable and low noise electronics

Strictly non-magnetic materials used in the interior

Swept mode

Angular mode optimized for 1 mm sample/spot size

II. VUV Lamp with Monochromator - 01 Unit

II. A high intensity VUV source with following specifications.

A. VUV flux should be more than 2×10^{16} photons/sr s.

B. Emitted radiation using Helium should have:

FWHM less than 2 meV at 41.8135 eV

FWHM less than 1.2 meV at 23.08 eV

FWHM less than 1.2 meV at 21.2182 eV

The UV-source should deliver at least 2.0 microA using a 2.8 mm I.D. capillary, on a 15 V bias and Al photocathode.

C. Required differential pumping additions

III. U.V. Monochromator with the following specifications:

A compact monochromator optimized for high efficiency at both He I and He II. Complete separation of HeI alpha and HeI beta should be achieved while maintaining at least 1 meV bandwidth.

Exit port incl. port aligner: CF35

Pumping port: CF100

Baking temperature: 150 degrees C

Grating adjustable: $\hat{A} \pm 5$ mm perpendicular to the VUV beam 0: the order to 122 nm.

Toroidal grating

304 ang. Efficiency: at least 40 percent at 1st order and less than 0.5 at 2:nd order.

Monochromator Entrance Valve and Exit Stage, Capillaries of different sizes. etc.

Commercial Terms & Conditions: -

1. **Price:** - The price mentioned above is Ex-Works/ FCA separately including export packing (Air worthy) charges (this does not include the appropriate taxes).
2. **Destination:** - The consignment should be sent to “The Director, Institute of Physics, P.O. Sainik School, Bhubaneswar-751005, INDIA” on freight to pay (payable in Indian Currency) basis.
3. **Delivery:** - Delivery of the consignment should be made within -----weeks from the date of issue of Letter of credit (L/C) either revocable or irrevocable.
4. ****Payment:** - *The payment will be released against irrevocable Letter of Credit (LC). You are required to issue an order confirmation letter in order to establish the L/C. 90% of the L/C value will be released on delivery of the consignment & balance 10% will be released after successful installation & commissioning of the equipment against submission of Performance Bank Guaranty (PBG) of equivalent amount (10%) valid for the warranty period and acceptance protocol signed by both the parties (supplier / it's authourised representative & buyer (IOP)). All Bank Charges towards Confirmation of the LC, if required, will be borne by the supplier.*
5. **Bank Charges:-** *All bank charges(except confirmation charges) inside India will be borne by the Institute & outside India will be borne by the supplier. If The LC confirmation is required by the supplier, the total confirmation charges will be borne by the beneficiary (supplier).*
6. **Bank Guaranty:** - You are required to submit a Performance Bank Guaranty equivalent to 10% of the equipment cost, valid for the entire warranty period issued by a nationalized Bank in favour of “Director, Institute of Physics, Bhubaneswar.
7. ****Details of the Consignment:** - You are required to submit the details of the consignment such as weight of the equipment, dimension of the packing & number of packets etc. at the time of order confirmation.
8. **Freight forwarder:** - The Institute will appoint the freight forwarder for forwarding & custom clearing of the consignment at the customs. The name of the freight forwarder will be intimated to the supplier at the time of opening of the L/C.
9. **Insurance:** - The transit Insurance of the consignment covering all risks and damages will be arranged by the Institute of Physics or its freight forwarder, duly authorized by the Institute.

10.Warranty: - The equipment should be warranted for a period of ----- months from the date of successful delivery / commissioning at Institute's site. The necessary warranty certificate in this effect should be furnished along with the supply/ commissioning of the equipment. Spare parts in warranty period are required to be replaced on DDP (Destination Duty Paid) basis.

11. Documents: - The despatch documents along with the signed invoice copy & the copy of the airway bill (2 copies each) should be despatched through courier / faxed to the Institute immediately after the equipment is handed over to the freight forwarder.

12. Operational Manual: - You are required to supply the operational manual of the equipment, circuitry diagrams etc. written in English only along with the consignment.

13. Installation & training:- Installation, personnel training & test measurement of the system at our site (Institute of Physics, Bhubaneswar) will be carried out by your trained engineers with your instruments, accessories, tools & tackles; deploying appropriate manpower as required, at your cost.

14. Essential Spares/ consumables: - Essential spares & Consumables along with the price list applicable for a period of 3/5/10 years are required to be supplied with the equipment & to be quoted separately.

15. Shipment: - Partial will not be strictly allowed.

16.Agency Commission: - No agency commission will be paid to any body / organization for this purchase.

17.Banker: - Our banker is Indian Overseas Bank, 121, New Station Square, Unit III, Bhubaneswar- 751001, INDIA. You are required to specify the Banking details such as A/c No, SWIFT code, Branch Code, name of the Bank etc. in order to release the payments.

18.Training: -

19. Service support: -

20.Preventive Maintenance: -

21.Pre-Delivery Inspection:

22.Acceptance: - If the terms & conditions mentioned above are acceptable to you, you are required to send the order confirmation letter along with a copy of this purchase order & details of consignment to the Institute within 02 weeks from the date of issue of the P.O. as a token of your acceptance.

DIRECTOR