TENDER DOCUMENT

TENDER FOR THE PURCHASE OF

X-Ray Photoelectron Spectroscopy System

UNDER

TWO BID SYSTEM

NO. 1190-18/PH-10071/CRF-XPS/PS

CHECK LIST

DULY FILLED CHECK LIST TO BE ATTACHED WITH THE TECHNICAL BID

Sl. No.	Particulars	Check Mark
1	Whether EMD / Tender Fees attached?	Yes/ No
2	Whether technical specifications of the quoted equipment attached?	Yes/ No
3	Whether catalog of the equipment attached?	Yes/ No
4	In case of authorized agent/distributor whether certificate/ authorization letter for the same issued by the manufacturer attached?	Yes/ No
5	Whether tender document along with all Annexures (A to G) duly signed & stamped by the authorized signatory attached?	Yes/ No
6	Whether affidavit duly attested by the Oath Commissioner/Executive Magistrate regarding non-black listing of supplier attached?	Yes/ No
7	Whether list of Institutes/Organizations where the quoted model of equipment supplied by the tenderer in India is attached?	Yes/ No
8	Whether split rates of each sub units are quoted?	Yes/ No
9	In case of foreign suppliers quoting directly, whether, the name of Indian agent mentioned?	Yes/ No
10	Whether compliance sheet duly filled in, signed & stamped attached?	Yes/ No
11	Whether warranty certificate duly filled in, signed & stampeled attached?	Yes/ No
12	Whether AMC certificate duly filled in, signed & stampeled attached?	Yes/ No

List of Annexures

भारतीय प्रौद्योगिकी संस्थान रोपड़
INDIAN INSTITUTE OF TECHNOLOGY ROPAR
नंगल रोड, रूपनगर, पंजाब-140001/Nangal Road, Rupnagar, Punjab-140001
Ph. 01881-242193, e-mail: purchase@iitrpr.ac.in

NO. 1190-18/PH-10071/CRF-XPS/PS 17/10/2018

Notice Inviting Quotation

IIT Ropar intends to purchase the following equipments. You are, therefore, requested to send your sealed offer in Two Bid System as per the instructions given below:

Sl. No.	Description	Quantity
1	**X-Ray Photoelectron Spectroscopy System (Detailed specifications of above items as per Annexure-A**	1

1. Schedule of EMD :

1	**Last Date and Time of receipt of tender :**	**08.11.2018 up to 03:00 PM.**	
2	**Opening of Technical Bids on :**	**08.11.2018 at 03:30 PM.**	
3	**Tender Fee**	**₹2,000.00**	**(GST @18% Extra)**
4	**Earnest Money Deposit (EMD)**	**₹1,500,000.00**	

2. Tender Fees and EMD:

Tender Fees & EMD to be submitted in shape of DD/BG/TDR favouring **'IIT Ropar Revenue Account'** payable at Ropar alongwith the Technical Bid. Offers without EMD shall not be considered.

3. Two Bid System :

(a) Technical bid consisting of all technical details alongwith commercial terms and conditions and EMD; and

(b) Financial bid indicating item-wise price for the items mentioned in the technical bid.

Technical bid and financial bid should be sealed in separate covers duly superscribed and both these sealed covers are to be put in a bigger cover which should also be sealed and duly superscribed as "Technical Bid for the supply of "X-Ray Photoelectron Spectroscopy System " and "Financial Bid for the supply of "X-Ray Photoelectron Spectroscopy System" Due on < Last date and time >. Technical bids shall be opened at the first instance and evaluated by technical committee. At the second stage financial bids of the only technically qualified bidders shall be opened for financial evaluation and ranking before awarding the contract. Mixing price bid with technical bid will disqualify your bid for further evaluation.

4. Submission of tender:

Offers addressed to the 'Registrar, IIT Ropar' and valid for 90 days should reach the **The Deputy Registrar (S&P), Utility Block, Indian Institute of Technology Ropar, Birla Farms, Permanent Campus, Rupnagar-140001** on or before the last date and time. Tenders received late shall not be considered.

5. Bidding:

a). Either the Indian agent on behalf of the Principal/OEM or Principal/OEM itself can bid.

b). If an agent submits bid on behalf of a Principal/OEM, the same agent shall not submit a bid on behalf of another Principal/OEM in the same tender for the same item/product.

All offers other than those from the Principal/OEM should be supported by an authority letter from the manufacturer authorizing the supplier to tender on their behalf. In case of manufacturer a certificate or a copy thereof to the effect that the bidder is a manufacturer of the equipment must be accompanied with the technical bid prepared as per 'Annexure – B'.

6. Opening of Bids:

Technical bids will be opened as per the above schedule in the presence of bidders or their authorized representatives whosoever may wish to attend. In case the due date of receipt/opening of the quotation/s (technical/price) is declared a holiday in the Institute, then, the due date of receipt/opening of the quotations shall be the next working day at the same time.

7. Price Bid:

Price bid should be prepared as per 'Annexure – E'.

8. Rates Comparison:

Bidders are requested to send their rates on FOR, IIT Ropar basis in case of indigenous items and on FOB/FCA basis in case of imported items with separately mentioning CIF/CIP charges. Rates comparision will be made on Net Price (Including Freight/ Insurance/Installation/Taxes/Duties etc.) if offers are received both for indigenous and import items. If offers are received only for import items then comparison will be made on FOB/FCA basis. Rates of available foreign currency will be taken from RBI website as on the opening of the technical bids for the purpose of conversion in Indian rupees.

9. Spares:

The spare parts/wear & tear consumables, if any, required for trouble free operation of equipment to be quoted separately giving the full nomenclature, rate, quantity and shelf life of each item.

10. Indigenous items:

The items which can/are to be provided indigenously may be listed separately.

11. Parts of Equipments:

Where the equipment is composed of several subunits/components, the rate should be quoted for each subunit/component. The Institute reserves the right to increase or decrease the number of subunits/components and number of equipment according to its requirements. The rates in ambiguous terms will render the quotation liable to rejection. The words “Not quoting” should be clearly written against any item of equipment for which the tenderer is not quoting.

12. Payment Terms:

Payment will be made to the supplier through following modes.

a). Indigenous goods:

NEFT/Cheque/Demand Draft : 90% payment will be made within 30 days from the date of receipt of material at IIT Ropar and balance 10% after successful installation of the equipment and on the submission of performance bank guarantee valid for warranty period + 3 months .

b). Imported goods:

Letter of credit/Telegraphic Transfer/Sight Draft – 90% payment will be made through LC/TT/SD and balance 10% after successful installation of the equipment and submission of performance bank guarantee for 10% of order value, either by the principal company or by their Indian agent valid for warranty period + 3 months. Bank charges occured outside India will be borne by the beneficiary.

13. Acceptance of Terms & Conditions:

Bidders must confirm the acceptance of all the terms and conditions of this NIQ. Any non-acceptance or deviations from the terms and conditions must be clearly mentioned. However, tenderers must note carefully that any conditional offer or any deviation from the terms and conditions of this NIQ may render the quotation liable for rejection.

14. Service Manual/Curcuit Diagram

It is specifically required that the bidders will supply all the operating & service manuals and circuit diagrams alongwith the equipment.

15. Power Supply:

The equipment should be quoted only for 220 volts and 50Hz electricity supply. The extra requirement of line voltage, current rating etc. and the optimum climate and environment required for the equipment must be stated precisely. Voltage stabilizers/ isolation transformers/CVT/UPS etc., as may be required shall be listed separately. The full technical specifications and literature in respect of the voltage stabilizer etc., must be furnished.

16. Guarantee/Warranty and AMC:

Duly signed and stamped certificate of at least 5 years comprehensive onsite warranty as per Annexure-G should be attached with the technical bid. Successful firm will be required to agree for payment of penalty for exceeding permissible downtime during Guarantee / Warranty period. Annual Maintenance Contract charges for 2 years after the expiry of warranty period should be quoted as per Annexure-H. The rates of AMC will be taken into consideration while making rates comparison.

17. Country of origin:

Country of origin of the quoted item should be mentioned in the offer in case of imported item.

18. Customs Duty or Excise Duty:

IIT Ropar is exempted from the payment of Customs Duty/Excise Duty. CDEC/EDEC with DSIR certificate will be provided along with the order (If applicable).

19. Service Facility:

Bidder should mention about the service set up in India and how capable they are to provide after sales services.

20. Training:

If required, should be included in your offer without any extra cost.

21. Banker's details:

Name and address of the banker of your company should be mentioned.

22. Reference of supply:

Name and contact details of the premier educational Institutes where the quoted equipment has been installed in India should be attached as per Annexure-F during the last 5 years. Copies of at least two purchase orders may be attached(If possible). IIT Ropar reserves the right to inspect the equipment for its actual performance in any of the listed Institute. The list of installations with contact details for the last 5 years must be provided.

23. Arbitration

In the event of failure to carry out the contractual obligations, within the stipulated period or extended period and determination of the contract for any reason, violation of warranties etc. the IIT Ropar shall have the right to carry out the unfinished obligation at the exclusive cost and risk of the bidder/firm, after due notice and the difference so accrued shall be recoverable from the bidder/firm.

23.2 The provision of the Arbitration and Conciliation Act, 1996 or as at the relevant time and of rules framed there under and any statutory modifications thereof shall be deemed to apply and be incorporated in this agreement.

23.3 Upon every or any such reference, the cost of any incidentals to the reference and award(s) respectively shall be at the reasonable discretion of the Arbitrators or in the event of their not agreeing, of the Umpire appointed by them who may determine the amount thereof or direct the same to be fixed as between solicitors and client or as between parties and shall direct by whom and in what manner the same shall be borne and paid.

23.4 Panel of arbitrators will be provided by IIT Ropar out of which the bidder will have to select one.

23.5 The bidder shall have no objection if the officer who has dealt with the case at any stage is nominated as an arbitrator. Further, that one of the arbitrator's shall be Accounts Expert.

23.6 In case of vacancy being caused due to resignation, death or incapacity of the arbitrator(s) to function as such, the same shall be provided in the aforesaid manner and the new arbitrator(s) shall proceed from the stage at which vacancy is caused.

24. Jurisdiction:

The Courts of Ropar alone will have the jurisdiction to try any matter, dispute or difference between the parties arising out of this tender/contract. It is specifically agreed that no Court outside and other than Ropar court shall have jurisdiction in the matter.

25. Force Majuere:

Any failure of omission or commission to carry out the provision of this contract by the supplier shall not give rise to any claim by one party, one against the other, if such failure of omission or commission arises from an act of God; which shall include all acts of natural calamities such as fire, flood, earthquake, hurricane, or nay pestilence or from civil strikes, compliance with any statute and/or regulations of the Government, lockouts and strikes, riots, embargoes or from any political or other reason beyond the supplier's control including war (whether declared or not) civil war or stage of insurrection, provided that notice of the occurrence of any event by either party to the other shall be given within two weeks from the date of occurrence of such an event which could be attributed to Force Majuere conditions.

26. Risk & Cost

In the event of failure to carry out the contractual obligations, within the stipulated period or extended period and determination of the contract for any reason, violation of warranties etc. the IIT Ropar shall have the right to carry out the unfinished obligation at the exclusive cost and risk of the bidder/firm, after due notice and the difference so accrued shall be recoverable from the bidder/firm.

27. The material found defective upon opening by the supplier representative in presence of Central stores personnel/indenter of IIT Ropar or not as per tendered specifications will be lifted back at the cost and risk of the supplier. The material lying in the IIT Ropar premises would be at supplier's risk and cost.

28. Liquidated Damages:

In case the firm fails to execute the supply as per the purchase order in whole or in part as per the terms and conditions of PO, IIT Ropar can impose the penalty @1% per week of the undelivered stores, subject to a maximum of 10%. It will also be open to the institute to procure the required item(s) from any other source at the risk and expense of the firm.

29. Relocation:

The supplier has to stand guaranted for the relocation of supplied equipment once the permanent campus of IIT Ropar gets ready for operation. Transportation of the equipment will be provided by the Institute.

Note: The Director, IIT Ropar reserves the right to accept/reject any or all tenders without assigning any reasons thereof and also to reject the material if the same is not found conforming to the specifications, with further right to affect risk and cost of the purchases.

Registrar

Annexure- A

Tender Specifications

Introduction

Complete ultrahigh vacuum (UHV) system for X-ray photoelectron spectroscopy (XPS) and ultraviolet photoelectron spectroscopy (UPS), depth profiling and Auger Electron Spectroscopy (AES) and Reflection Electron Energy Loss Spectroscopy (REELS). The system must fulfil the following requirements as a minimum.

1.0 General

The required XPS system must be able to characterize a broad range of materials including conducting, magnetic, semiconducting, insulating solid materials in the form of bulk or powder or thin film, and soft materials such as organics, rubber, polymers samples, nano materials, chemical compounds, alloys, metals, batteries, catalysts, hydrogen storage materials, semiconductors etc. The system should provide survey spectra, narrow region spectra and mapping (elemental and chemical state imaging) of surface and also allows charge neutralization, depth profiling and angle-dependent XPS measurements.

2.0 Vacuum system

2.1 The vacuum system must comprise of an analysis chamber and an entry lock chamber. The entry lock chamber should be evacuated by turbo molecular pump (TMP), and suitable backing pump. The analysis chamber should be evacuated by turbo molecular pump (TMP)/ion pump and suitable oil free zero maintenance backing pump

2.2 The vacuum system must include a series of interlocks designed to prevent inappropriate operation of valves etc. Analysis chamber base pressure after baking and cooling with standard samples must be guaranteed at 5×10^{-10} mbar or better for UHV surface analysis. There must be suitable pressure read out gauges for both the chambers to read pressures in UHV range

2.3 The system should have safety features that protect the vacuum in case of power failure.

2.4 The pumps and all valves must be controlled from the computer controlled software.

3 Entry lock chamber

3.1 The system must have an entry-lock/load-lock chamber to insert the sample in the first step, i.e., prior to allowing sample into analysis chamber. The load lock chamber must have an arrangement to cool or heat the samples in the range of −140 °C to 700 °C or wider and suitable display unit to read the temperature. The pressure in the load lock chamber should be of the order of 10^{-9} mbar

3.2 In case, entry lock chamber does not have a heating/cooling facility, controlled gas insertion or do some thin film deposition. A sample preparation chamber must be included which have heating and cooling provision in the above-mentioned temperature range, gas insertion and able to do thin film deposition and that must be attached with TMP backed by suitable pump.

3.3 There must be a suitable mechanism to transfer the sample from Entry lock chamber to analysis chamber without breaking the vacuum.

3.4 The system must have a provision to park at least two additional sample holders in the introduction/preparation chamber. While one sample holder is inside the analysis chamber for data collection, another sample holder can be placed inside the entry lock and the holder should be ready to transfer to analysis chamber without breaking the vacuum of the load lock. More than one parking slots are preferable.

4 Analysis Chamber:

4.1 Constructed from Mu-metal for optimum magnetic field shielding.

4.2 Analysis chamber base pressure after baking and cooling must be guaranteed at 5×10^{-10} mbar or better for UHV surface analysis.

4.3 There must be ports on the analysis chamber to allow additional analytical components to be added. It must be possible to attach the following components simultaneously; X-ray

monochromator, non-monochromatic twin-anode X-ray source, UV lamp for UPS and a field-emission electron gun for Auger electron spectroscopy.

4.4 This chamber must have optical camera and/or microscope to view the exact analysis position on the samples. Load lock as well as analysis chamber must have separate cameras for viewing of the samples.

4.5 There should not be any requirement of removing heating filaments/unit while baking process. During pumping and baking out all control of scroll oil free/rotary pumps, Turbo molecular pump, titanium sublimation pump and all the valves should be controlled by software only.

5.0 Sample Stage manipulator and Sample holder

5.1 The stage manipulator should hold sample holder of size ≥ 50 mm dia or an area ≥ 1000 mm^2. The stage should allow holding up to 12 mm thick/height sample. The stage must have software-controlled 5-axes movements in X, Y, Z, tilt/theta and continuous rotation/Phi.

5.2 The stage should allow software controlled angle resolved XPS measurement (-90 to +90 degrees with both in theta and phi)

5.3 Sample heating up to 700°C in both analysis chamber and preparation chamber

5.4 Sample cooling down to -140°C in both analysis chamber and preparation chamber. Instrument must be offered with small block, large block, rotation block, thick sample holder block, powder holder block and heating and cooling sample holder blocks for lower and higher temperatures in the main offer.

Sample holders (of size mentioned) for powder, thin film, and thick sample must be provided. Angle-dependent measurement should be supported using main stage only

Separate holder suitable for heating and cooling studies should be provided.

6.0. X-ray source and monochromator

6.1 For high-resolution XPS the instrument must have monochromatic Al Kα X-ray source. X-ray spot in spectroscopy mode must be variable between at least 200 µm-300µm or better. One more Dual anode non monochromated source having MgKa and AlKa should be offered in option.

6.2 X-ray source must be fitted with a movable anode to maximise lifetime and it should be supported with documentary evidence.

7. Analyser and detector

7.1 The electron energy analyser must have ≥ 125 mm mean radius with full 180 degree hemispherical analyser. System should be easily switched between CRR and FAT modes

7.2 The system must have multiple channeltron electron array detector for spectroscopy (XPS, REELS, AES, UPS, etc) along with a multiple channel plate imaging mode detector.

7.3 The energy range of analysis must be 0 − 5000 eV or wider and the energy range of analysis should be sufficient enough for doing work function measurements as well.

8.0. Energy resolution and spatial resolution

8.1 The XPS energy resolution must be ≤ 0.5 eV (FWHM) for Ag 3d5/2 peak

8.2 The system must provide Chemical State Imaging (Scanning X-ray Beam or Parallel Technology) with a lateral resolution of 10 µm or better. The minimum analysis area must be ≤ 10 µm x 10 µm or better. System should have good auger mapping facility so that high resolution can be achieved.

9.0. Sensitivity

The minimum sensitivity must be demonstrated as follows:

9.1 Maximum utilized and specified X-ray power is 300W.

9.2
≥ 2 Mcps on large analysis area at a resolution of ≤ 1.0 eV (for FWHM Ag 3d5/2) using an X ray power of ≤ 300 W. Vendors should mention their achievable sensitivity.

9.3
≥ (200 Kcps) on large analysis area at a resolution of ≤ 0.5 eV (for FWHM Ag 3d5/2) using an X ray power of ≤ 300 W. Vendors should mention their achievable sensitivity.
9.4 Preference would be given to system which has higher sensitivity using lower X-ray power.

10. Charge neutralization
10.1 Robust charge neutralization mechanism, using both argon ions and electrons.

10.2 The charge neutralization must work in depth profiling mode too.

10.3 Charge neutralization must work for all available analytical methods which do require as such.

11. Ion gun and Depth profiling

11.1 A high performance Ar^+ ion gun capable of operating in both monatomic and cluster ion modes (two separate sources or a single source), attached to the analysis chamber, utilizing Ar+, enabling state-of-the-art depth profiling and surface cleaning of both soft and hard materials, must be supplied. System should have high ion current which is useful for ion and depth profiling experiments. System should have provision for faraday cage/cup to optimise the ion and electron currents and to determine the beam sizes on the sample holder.
11.2 In monatomic mode, this Ar^+ ion gun must offer a beam energy range from 500 eV to 4 keV. Dual gun working in monoatomic and cluster mode should have energy range from 1eV to 4 keV
11.3 In cluster mode for optimum depth profiling of polymers and soft materials it must be possible to adjust the cluster size and acceleration voltage allowing the energy per atom in the clusters vary from as low as 1 eV to 40 eV or wider. The number of variable atoms in cluster should be computer controlled and size of cluster should be varying from 100 to 2000 atoms at least.
11.4 The data system must control all of the parameters of the ion gun and the gas handling, including switching from monatomic to cluster ion mode.
12. Ultra Violet Photon Spectroscopy.
12.1 The system must be provided with a high intensity UPS source (UV lamp) producing He I / He II for valence band spectroscopy and work function measurement.

12.2 UPS performance must be demonstrated on a clean silver sample. Under identical spectroscopic conditions, a count rate of ≥ 1 Mcps must be demonstrated when the resolution at the Fermi edge is ≤ 100 meV for He (I).
12.3 All differential pumping, gas handling and source operation must be automated, so that it can be operated from the data system, and used within complex experiments such as depth profiles. The standard operation must be configured for use with helium, with the data system able to automatically start the lamp and operate in He (I) or He (II) modes. UPS should be completely automated including gas insertion and sample measurements.
13. REELS
13.1 System should provide Reflected Electron Energy Loss Spectroscopy (REELS) of any equivalent technique to detect hydrogen in polymers, measure band gaps in semiconductors and analyse the conjugated carbon content of polymers, OLEDs etc.
13.2 Energy resolution of the elastic peak must be 0.5eV or better.
13.3 System must be demonstrated for 1 Mcps at 0.5 eV FWHM.

14. Other accessories (Chiller, compressor, UPS etc.)

1. International branded chiller with adequate capacity (as required for your system) must be supplied to support the quoted system for smooth operation.
2. Chiller must be quoted from the OEM of XPS.
3. Branded On-line UPS with battery (20 kVA rating based on power requirement of the instrument) for uninterrupted power supply for at least 1 h backup.
4. Necessary number of high purity N2, Ar, compressed air (noise free compressor) and He gas cylinders, as required for installation and operation of the instrument.
5. Stainless-steel gas lines

15. PC/Computer

The system should be controlled automatically for all the Parameters as per tender specifications however in case of computer system failure the manual override must be available. It should be used to perform basic experiment. The current generation PC with 64 bit latest window 7 or 10 operating system which supports the software and smooth operation of XPS, UPS, and other attached systems must be included.
The supplier should upgrade the software free of cost whenever they are available.

16. Software

1. Supplier must provide license software for the complete XPS operation including option to make changes manually.
2. The system must have ability to be controlled remotely via internet/network.
3. There must be at least 10 numbers of data processing software user licences (or dongles) for XPS spectra analysis through peak identification using the library and peak fitting.
4. The latest version software must be provided with free update. The hardware should also be latest window-based system.
5. XPS library must be provided.
6. The Handbook of XPS analysis (hard copy) is necessary and should be provided along with instrument supply.

17. Calibration standards

Standard samples (Ag, Au, Cu and PET) must be provided to check the system calibration, resolution, sensitivity, etc.

18. Consumables and accessories

1. The system should be supplied with all the accessories and consumables required to run the system for at least 5 years.

2. The consumables should include the following:
   Set of Channel Electron Multiplier (CEM) detectors- 1 set
   Filament assembly for charge compensation source – 5 sets
   Filament Kits for system flood gun and electron gun and XPS anode – 5 nos each
   X-ray monochromator emitter- 2 sets
   X-ray monochromator anode- 2 sets
   Filter cartridge for water circuit- 4 sets
   Backing pump oil (4 litre pack)- 1 set
   Gaskets spares kit- 2 set
   Mechanical spares kit- 1 set

Titanium sublimation pump filament kit including 3 filaments per kit- 4 sets
Cluster mode source filament assembly- 4 sets
Cluster mode source expansion nozzle- 1 sets
UPS Capillary kit- 1set

These items should be clearly mentioned in the bid with qty mentioned and should be shown to purchaser at the time of delivery. Any material should not be used or fitted inside the machine at the time of installation from the above list. This is spare only list. If there is any shelf life of any of the spare it should be clearly indicated.

3. Supplier must provide the list of consumables as mentioned above with a part number
4. Local items- Double Stage stainless steel suitable Gas cylinders with regulators and tubings must be quoted. Any other local items required should be in vendors scope.

19.Warranty

Comprehensive Warranty for five years for entire system including all the attachments (such as UPS, chiller and compressor or any other third party component) of the system from the date of installation and commissioning.

Service response must be within 48 h. If service engineer fails to attend the complaint within 10 days, the warranty of the machine will automatically be extended for same number of days

The cost for additional TWO years of warranty and/or AMC after five years of warranty should be mentioned

20. Manuals

A complete set of instruction and service manual must be provided along with the system. The wiring and circuit diagrams should also be provided.

21.Installation and training

After installation by the engineers of supplier, the system performance must be demonstrated to the customer's satisfaction as per the specification detailed here.

The supplier must provide basic training to the users for at least five days after completion of installation.

A follow-up training must be provided by the supplier's engineer after six to nine months of installation.

1. Checklist should be made and checked with items and parts ordered and shipped.
2. All system assemblies/parts/electronics/cable should be fitted in order as per strict guidelines from factory/OEM. The detailed procedure should be handed over to user well in advance before installation. After each step, it should be marked and shown to user if required and requested for the same.
3. Each accessory should be installed to its fullest and following minimum specifications should be demonstrated to user as below
4. Sensitivity- 2 Mcps or higher at a resolution of $\leq$ 1.0 eV and 200 Kcps or higher at a resolution of $\leq$ 0.5 eV on large analysis area (for FWHM Ag 3d5/2) using an X ray power of $\leq$ 300 W. Strictly more than 300 W power should not be used.
5. XPS energy resolution of $\leq$ 0.5 eV (FWHM) for Ag 3d5/2 peak
6. Vacuum System Performance- Analysis Chamber $5.0*10^{-10}$ mbar or higher and UHV Preparation Chamber $7.0*10^{-9}$mbar or higher.
7. Ion Gun in Monoatomic and Cluster mode performance- 500 eV to 4 KeV monoatomic mode and cluster mode performance of 1eV to 40 eV energy and size of cluster selection from 100 to 2000 atom using software.
8. UPS performance demonstration on clean Ag surface and should have more than 1Mcps of counts.
9. Performance of REELS must be demonstrated by achieving counts 1 Mcps at 0.5 eV

FWHM or better.

10. Energy scale linearity must be demonstrated using Gold (Au4f), Silver (Ag3d5) and Copper (Cu2p)
11. ISS should be demonstrated if procured with at least 25,000 cps/nA with FWHM not more than 12 eV.
12. Demonstration of full software- working, control of accessories, vacuum etc as per specifications mentioned in tender.
13. Upon handing over the system to end user all the above and other required parameters pertaining to instruments and performance must be demonstrated fully and explained well to user. List of spares ordered must be counted and handed over to user with its exact quantity mentioned in tender specification.

22. Pre-installation Requirements

Pre-installation requirements such as room size, EM tolerance limits, and vibration limits should be mentioned and verified by the supplier at the installation site as soon as PO is issued

23. Additional Terms

The firm has to guarantee technical support for the entire system and supply of spares for a minimum period of 10 years from the date of installation.

Service response time must be <48 hours.

Provision for on-line remote diagnosis of faults.

The firm must have at least **Five** installations of similar equipment within India to establish desired competence for maintenance.

List of users with copies of installation report and contact details (address and phone number) of the users, where instrument has been supplied in last three years should be provided.
Date of manufacturing of the equipment should be after the placement of order.

Original documents from the manufacturer supporting the specifications should be provided.

A detailed compliance statement indicating point-wise response of the vendor to every item in the specifications, optional items as well as terms should be provided.

Price-bid should have every item mentioned in technical bid.

24.Optional Items:

Vacuum Transfer vessel
Suppliers should quote for a non monochromated X-ray source of anode material Mg as an option.
Filament kit for twin anode non Monochromated source – 2 nos.

Auger Electron Spectroscopy

Supplier must quote a Field Emission Electron Source (FEG) as an option fulfilling the following requirements: A Schottky field emission electron gun capable of producing an electron spot size of < 100 nm. This gun must be fully controlled by the data system. It must be possible to use this gun to produce Auger spectra, maps and line scans and SEM images.
Field emission electron source AES- Field emission tip 1 set and silver gaskets 2 nos.
The system should provide Ion Scattering Spectroscopy (ISS) or any equivalent technique to provide elemental information with monolayer sensitivity, e.g. coverage measurements of ultra-thin films.
Vendor should quote for an operator who will be operating XPS at IIT Ropar facility including basic maintenance of the system and operator should be stationed at IIT Ropar for a minimum period of 3 years.

Annexure : B

Technical Compliance Sheet

Supplier MUST provide the model number of their product in the cover letter which complies with the tender specifications and an original printed manual on the letter head of principal supplier of the same shall be submitted with the bid. Bidders should highlight the features in the printed manual using color text liner/manually mark which complies with the tendered specifications. Vendors are strongly advised not to submit any other manual in their bid. The following compliance sheet to be filled-up correctly and completely. Otherwise, it may lead to cancellation of their bid without any communication from IIT Ropar.

S.No.	Specifications	Compliance of quoted Model (Yes/No)	Mention value of specification for each points related to quoted items; if any deviation, it needs to be clearly mentioned here	Indicate page number in the printed manual with respect to specifications

Annexure: C

FORMAT FOR MANUFACTURER'S AUTHORISATION CERTIFICATE

To,
The Registrar
Indian Institute of Technology Ropar
Nangal Road, Rupnagar-140001

Sub. : Tender for "_____".

Dear Sir,

We,_____, who are established and reputed manufacturers of _____, having factory/office at_____, hereby authorize M/s _____ [name & address of agents/distributors] to bid, negotiate and conclude the order with you for the above goods manufactured by us.

We shall remain responsible for the tender/Agreement negotiated by M/s _____, jointly and severely. No company or firm or individual other than M/s _____ are authorized to bid, negotiate and conclude the order in regard to this business against this specific tender as for all business in the entire territory of India.

An agency commission of ____% included in the FOB price is payable to M/s _____. We hereby extend our full guarantee and warranty as per the terms and conditions of tender for the goods offered for supply against this invitation for bid by the above supplier.

1. _____

2. _____

*specify in detail manufacturer's responsibilities+the services to be rendered by M/s_____ are as under:

i) _____

ii) _____

[Specify the services to be rendered by the agent/distributor] In case duties of the agent/distributor are changed or agent/ distributor is changed it shall be obligatory on us to automatically transfer all the duties and obligations to the new Indian Agent failing which we will ipso-facto become liable for all acts of commission or omission on the part of new Indian Agent/ distributor.

Yours faithfully,

[Name & Signature]
For and on behalf of M/s. _____ [Name of manufacturer]

Note: This letter of authorization should be on the letterhead of the manufacturing concern and should be signed by a person competent and having the power of attorney to bind the manufacturer.

Annexure: D

FORMAT FOR NON BLACKLISTING OF SUPPLIER

I/ We _____Manufacturer/partner/Authorized Distributor/Agent (strike out which is not applicable) of (Supplier) _____ do hereby declare and solemnly affirm that the individual/firm/company is not black-listed by the Union/State Government/Autonomous body.

Deponent

Address _____

I/ We hereby solemnly declare and affirm that the above declaration is true and correct to the best of my knowledge and belief. No part of it is false and nothing has been concealed.

Deponent

Dated: _____

(Note: To be furnished on non-judicial stamp paper duly attested by the Oath Commissioner.)

Annexure: E

FORMAT FOR THE SUBMISSION OF RATES – PRICE BID

(To be submitted on the letterhead of the company/firm)

Name of the Equipment _____

Name of the Manufacturer _____

Make of the Equipment _____

Model Number _____

County of Origin _____

Sl. No.	Particulars	Rate/Unit
1	Cost of the equipment with 5 years comprehensive warranty (FOB value including Indian Agency Commission)	
2	Air freight, Insurance charges etc. (In case of import item)	
3	Total CIF value up to New Delhi Airport (In case of import item)/ Total FOR IIT Ropar value (In case of indigenous item)	
4	AMC charges for 1st year after expiry of warranty	
5	AMC charges for 2nd year after expiry of warranty	
6	Percentage of Indian Agency Commission (IAC) payable to the Indian Agent, if any (In case of import item).	
7	FOR charges in Rupees including clearance, loading & unloading, transportation and insurance from New Delhi Airport to IIT Ropar (In case of import item)	
8	Packing dimension of the equipment	
9	Gross weight of the equipment after packing	

This is certified that the rates quoted above are not more than the rates charged from any other Institute/ Department/Organization.

Note:
1. Taxes and other levies, if any are to be clearly specified in the bid.

Annexure: F

PROFORMA FOR USER/CLIENT LIST

Sl. No.	Name & full address of purchaser	Purchase Order No. & Date	No. of Units (Qty)	Model No. with Date of Installation	Contact person with cell, phone and e-mail id

Annexure: G

CERTIFICATE OF WARRANTY

i). I/We certify that the warranty shall be for a period of 5 years comprehensive onsite warranty starting from the date of satisfactory installation, commissioning and handing over of the equipment and of the works conducted therewith covered under the supply order in working order. During the warranty period, I/we shall provide free "after sale service" and the replacement of any part(s) of the equipment or rectification of defects of work of the equipment will be free of cost. The replacement of the parts shall be arranged by us, at our own cost and responsibility. We undertake that the above warranty shall begin only from the date of satisfactory and faultless functioning of the equipment for 60 days at IIT Ropar premises. The benefit of change in dates of the warranty period shall be in the interest of the use/your organization.

ii). During the warranty period, we shall provide at least 3 preventive maintenance visits.

iii). Uptime Guarantee: During the warranty period, we will be responsible to maintain the equipment in good working conditions for a period 345 days (i.e. 95% uptime) in a block of 365 days.

a). All complaints will be attended by us within 2 weeks of receipt of the complaint in our office.

b). In case there is delay of more than 2 weeks in attending to a complaint from our side then you can count the number of days in excess of the permissible response time in the downtime. The above said response time of 2 weeks for attending to a complaint by us will not be counted in the downtime.

c). Penalty: We shall pay a penalty equivalent to 0.1 % of the FOB value of the equipment for every week or part thereof delay in rectifying the defect.

Note: The right to accept the reason (s) for delay and consider reduction or waive off the penalty for the same shall be at the sole discretion of Director, IIT Ropar

iv. We certify that the equipment being/quoted is the latest model and that spares for the equipment will be available for a period of at least 10 years and we also guarantee that we will keep the organization informed of any update of the equipment over a period of 10 years.

v. We guarantee that in case we fail to carry out the maintenance within the stipulated period, IIT Ropar reserves the right to get the maintenance work carried out at our risk, cost and responsibility after informing us. All the expenses including excess payment for repairs/maintenance shall be adjusted against the Performance Bank Guarantee. In case the expenses exceed the amount of Performance Bank Guarantee, the same shall be recoverable from us with/without interest in accordance with the circumstances.

vi. We shall try to repair the equipment at IIT Ropar premises itself. However, the equipment will be taken to our site on our own expenses in case it is not possible to repair the same at IIT Ropar. We shall take the entire responsibility for the safe custody and transportation of the equipment taken out for repairs till the equipment is rehabilitated to the IIT Ropar after repair Any loss of equipment or its accessories under its charge on account of theft, fire or any other reasons shall be at our sole risk and responsibility which will be compensated to IIT Ropar for such losses at the FOB/CIF value for the damaged/lost equipment/part, including accessories.

vii. We undertake to perform calibration after every major repair/breakdown/taking the equipment for repair out of IIT Ropar premises.

viii. In case of extended warrantee, we undertake to carry out annual calibration of the equipment.

ix. We guarantee that we will supply spare parts if and when required on agreed basis for an agreed price. The agreed basis could be an agreed discount on the published catalogue price.

x. We guarantee to the effect that before going out of production of spare parts, we will give adequate advance notice to you so that you may undertake to procure the balance of the life time requirements of spare parts.

xi. We guarantee the entire unit against defects of manufacture, workmanship and poor quality of components.

Annexure: H

TERMS AND CONDITIONS OF THE SERVICE CONTRACT

1. During the service contract period, the firm shall provide at least 3 preventive maintenance visits per year and attended to all emergent and break-down calls.
2. The service contract charges must be quoted separately for each year strictly as under and quoting of rates in ambiguous terms or in percentage terms etc. shall render the tender liable to rejection :
3. Rate for 1st year = _____ (Rupees in words).
   Rate for 2nd year = _____ (Rupees in words).
4. The service contract charges should be quoted only for services and travel cost etc. and should not include the cost of any replacement parts/components which shall be arranged by the IIT ROPAR at its own cost.
5. In each block of 365 days during the entire service contract period the firm will be responsible to maintain the equipment in good working condition for a period 350 days (i.e 96% uptime). The time taken by the IIT ROPAR in providing to the firm the spare parts shall not count towards the down time. All the complaints will be attended by the firm within 2 working days of the dispatch of the complaint to their office. In case there is delay of more than 2 working days in attending to a complaint then the number of days in excess of the permissible response time shall be counted in the downtime. In case total downtime exceeds the permissible downtime a fine equivalent to double the service contract charges shall be recovered from the firm on per day basis.
6. The right to accept the reason(s) for delay and consider reduction or waive off the penalty for the same shall be at the sole discretion of Registrar, IIT Ropar.
7. We undertake to carry out annual calibration of the equipment.
8. We undertake to perform calibration after every major repair/breakdown/taking the equipment for repair out of IIT Ropar premises.
9. The replaced parts shall remain the property of the IIT Ropar.
10. The firm shall try to repair the equipment at IIT Ropar itself. However, the equipment may be taken to their site, on their own expenses if in case it is not possible to repair the same at IIT Ropar. The firm shall take the entire responsibility for the safe custody and transportation of the equipment taken out for repairs till this is handed over the purchaser after repair. Any loss of equipment or its accessories on account of theft, fire or any such reasons shall be the sole risk and responsibility of the firm who will compensate the IIT Ropar for such losses at FOB value of the damaged/lost equipment/part including accessories.
11. During the service contract period the parts/components that may be needing replacement shall made available by the IIT Ropar at their own expenses and all import formalities, payment of customs duty etc., shall be complied with/borne by the IIT Ropar.
12. All service contract charges will be invoiced twice in each year. The payment of the invoice will be made afterwards.
13. No price revisions will be accepted by the IIT Ropar during the entire tenure of the service contract agreement.
14. AMC contains both hardware and software troubleshooting.