



**PONDICHERRY UNIVERSITY
(A Central University)**

**Tender document for supply of
X-ray Photoelectron Spectrometer**

**Under DST PURSE Phase – II
Pondicherry University**

NOTE

For further details and submitting bid please see CPP Portal
<https://eprocure.gov.in/eprocure/app>

Tender ID:2020_PU_533528_1

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TERMS AND CONDITIONS (UNDER TWO BID SYSTEM)

I. Instructions to the Bidder: -

1. Purchase of Tender Document

The Tender document can be downloaded from the website <https://eprocure.gov.in/eprocure/app>

2. Tender Document fee and EMD to be submitted

S.No	Equipment	Tender Document fee ₹	E.M.D ₹
1.	X-ray Photoelectron Spectrometer	2,500/-	7,00,000/-

3. Last Date & Time for submission of online Tender Documents

23rd January 2020, 11.00 am and will be opened on 24th January 2020 at 11.30 am

4. Submission of tender Document

Tender (technical bid and price bid separately) must be submitted through CPP Portal addressed to “Prof. V.V. Ravi Kanth Kumar, Coordinator, DST PURSE Phase-II, Department of Physics, Pondicherry University, R.V.Nagar, Kalapet, Puducherry – 605 014, India” positively before the scheduled time.

5. Payment of EMD & Tender Document fee:

The Tender must be accompanied with EMD (refundable) and Tender document fee (non-refundable), as stated above, by means of a separate Demand Drafts, in favour of the Finance Officer, Pondicherry University, payable at Puducherry.

6. Quoting the Core price & Tax, Duties, Discount etc.

The taxes / duties / discounts, if applicable, are to be explicitly and separately shown in the bid and under no circumstances these components shall be added to the basic price and shown as single price. All the components of taxes, if applicable, should be shown explicitly and separately.

7. Electrical Power

All equipment must operate at 230V/50 Hz single phase and / or equivalent three phase electrical power.

8. The validity of the Quotation

The validity of the quotation should be for at least 365 days from the opening date of the tender.

9. Late Bids

The offers will not be considered if received after the bid closing date and time.

10. Invalid quotes

The offers received through telex / tele-fax / e-mail/unsealed or open cover will not be accepted by the University under any circumstances.

11. No unsolicited correspondence

No unsolicited correspondence shall be entertained after the submission of the offer.

12. Purchase Agreement

If an order is placed with the firm, the purchase shall be governed by an agreement as per the University rules in force at the time.

13. Additions in terms and conditions

Additional terms and conditions will be incorporated in the purchase order, if needed, to safeguard the interests of the University.

14. Non-transferable

Tender is not transferable.

15. Power to reject the offer

Any offer containing incorrect and incomplete information shall be liable for rejection.

Pondicherry University reserves the right to accept / reject any offer in full or in part or accept any offer other than the lowest offer without assigning any reason thereof. *However, deficiencies on any one or, more of the following crucial criteria will be a material factor, for consideration other than the Lowest Quotation: -*

- a) *Total Number of installations of the similar Equipment in the premier Research/Academic Institutes in India.*
- b) *Availability of Service Network in India, especially in Chennai or Bengaluru.*
- c) *Valuable feedback from the present users about the performance, service support, accuracy of result, etc.*
- d) *Any other techno commercial information which is deemed fit to be important in the opinion of the University.*

II. Price Schedule

16. The bidder who is capable of supplying the entire solutions for the instrument quoted as per the list of ITEMS mentioned in the schedule, is alone need to submit their quotation.

17. The rates should be quoted for a single unit.

18. The price should include the delivery and installation at the Central Instrumentation Facility, Pondicherry University, Puducherry and training charges (if any).
19. In price bid no other documents like technical manuals, number of installations, Customer list etc. must be there. All such documents must be enclosed in the technical bid.

III. Eligibility:

20. The firm must have the requisite domain expertise with regard to supply, installation and post-sale service of the items they are quoting.
21. The firm should have been in existence for at least **six years** as on the date of this document and must have sufficient number of installations at least three orders of the similar equipment in the premiere Research/academic institutes in India.
22. The firm should have nation-wide Service Network all over India, especially in Chennai or Bengaluru.
23. The feedbacks from the present users of the similar equipment about the performance, service support, accuracy of result, etc. are to be submitted along with the Tender Document.
24. Any other techno commercial information, pertaining to this particular Equipment, principal suppliers, technical background and capability, local agents' background on Scientific Equipment Business, etc. may also be appended along with testimonials and documentary proof.

IV. Conditions of Contract: -

25. The offer must be in English. The rates should be indicated both in figures and words against item specified in the given Annexure. It is preferable that the price be quoted in Indian Rupees or in US Dollars or in major foreign currencies.
26. **The total cost should be quoted for FOB as well as CIF – Pondicherry University, Puducherry.**
27. The price quoted under FOB and CIF should also include the expected installation cost in the University Laboratory at Puducherry and also cost of consumables which are required for the main equipment for initial operation upto a reasonable period.
28. In case of the Principal supplier of Foreign country unable to meet the conditions stated at para no.4, the local agent / dealer should fulfil the above said conditions in respect of Local Insurance, Freight, safety transport and installation, etc.
29. The prices quoted shall remain firm until equipment is supplied to the Central Instrumentation Facility, Pondicherry University, Puducherry.
30. The University has been granted the benefit of exemption from the payment of the Central Excise Duty and Customs Duty by the Department of Scientific and Industrial Research

(DSIR), India, vide their Notification No. 10/97 dt.01-03-1997 and 51/96 dt. 23.07.96 respectively.

In respect of

- a. Scientific and technical instruments, apparatus, equipment including computers.
- b. Accessories and spare parts of goods specified in (a) above and consumables.
- c. Computer software, compact disks, CD ROM, Recording magnetic tapes, microfilms, micro-chips etc.
- d. Prototypes.

Customs duties at Indian port, if any, will be to the account of the University.

31. Infra-structural, power and any other requirement for satisfactory installation and commissioning of the whole system must be provided, at least 120 days in advance of the installation to be commenced. All drawing for electrical connections, electrical safety items piping work etc. must be provided in detail.
32. Complete technical specifications and literature, including process flow, to be included with the quotation. Manufacturers of various major parts/equipment must be mentioned explicitly.
33. A clear statement regarding availability of after-sales service and availability of spare-parts for next 10 years should be included.
34. Please give a recent customer list (within last five years) with contact details including email address.
35. If the tenderer have an authorized representative/agency in India, the technical ability of the agency to take care of the problems in the system, if developed later within the warranty and outside the warranty period has to be provided clearly. The responsibility of the Indian agent also must be clearly specified.
36. The bidder from abroad shall obtain, if required, export permission from the appropriate authorities in his country or the country of origin for items to be shipped to India in case of items to be imported. The University shall provide necessary information if required for this purpose.
37. The bidder from within India shall obtain the requisite approval for Imports etc., if required.
38. **Warranty:** The material covered under the purchase order, when installed, shall be warranted for the quality, workmanship, trouble free operation and performance for a period of **at least 36 months from the date of installation and the system into operation** at the Pondicherry University, If any item covered under warranty fails, the same shall be replaced free of cost including all the applicable charges including shipping cost both ways.
39. **Payments terms:** Normally a Letter of Credit will be opened for 100% FOB/CIF price on receipt of order acknowledgement. However, 90% of the LC amount will be paid after receipt of the proof of the shipment of the consignment with necessary documents as per the purchase order.

Balance of 10% of the LC amount shall be made after satisfactory installation and commissioning and against submission of the Installation & Commissioning certificate, duly accepted by the purchaser, and **a performance bond of 10% of the total contract / purchase value in the form of bank guarantee (obtained from Nationalized Bank of India) for the duration of the Warranty period.** (Refer Annexure – II for Bank Guarantee Format)

Bank charges in India shall be borne by the purchaser and outside India shall be borne by the contractor / supplier.

40. In case of any dispute in respect of the tender, all legal matters shall be instituted within the jurisdiction of the place where the purchaser ordinarily resides.
41. No Agency commission will be paid to any authorized agent in India.
42. Liquidated damages: Timely supply of the ordered items, installation, commissioning (wherever is applicable) and training etc. is the essence of the contract. In case of failure to supply within the time specified in the Purchase order, a penalty/LD of 0.5% of the total value per week or a part thereof shall be levied subject to a maximum of 7.5% in respect of items which are not supplied. The decision of Pondicherry University shall be final in this regard.
43. The training should be provided by the firm on the specimen and operation of the equipments for a minimum period of three weeks from the date of installation with an expert team for two persons.

For any clarification with respect to technical specifications, please contact
Prof. V.V. Ravi Kanth Kumar, Coordinator, DST PURSE Phase-II, (Department of
Physics), Pondicherry University, Puducherry.
Email: pudstpurse@gmail.com
Tel : 0413-2654406
ll : +91 94874 36539

For any CPPP Portal clarification,
eProcurement Cell, Chief Secretariat,
Puducherry – 605 001
Tel : 0413-2233262 / 2220225

Checklist is to be submitted along with the Technical bid

		To be submitted by the firm	To be verified by the Pondicherry University
1	Name of the firm and address		
2	Two sealed covers (Technical bid / Commercial bid)		
3	Earnest Money Deposit (EMD)	Name of the bank:	
		Amount:	
		Date:	
4	Tender Document Fee	Name of the bank:	
		Amount:	
		Date:	
5	GST Registration Copy		
6	Income Tax Returns details for the last three years.		
7	Letter of Authorization from the Original Equipment Manufacturer (OEM) Distributor		
8	Tenderer should be in the business of similar products atleast for 6 years as on the date of submission of the bid. Proof to be submitted		
9	A list of customers with contact details to whom supply were made during last 3 years may be furnished		
10	Name of the service engineer to be deployed and his Contact No.	1. Name & Cell No.	

**Signature of the authorized
person of the firm**

Committee Members:

X-ray Photoelectron Spectrometer – Specifications

S. No	Requirements/ Parts	Specification
1.	General	The XPS system should be able to perform analysis on conducting/ semiconducting/ insulating/ magnetic solid samples as well as polymers in the form of powder, thin film and bulk. The system should be able to provide survey spectra, high resolution spectra, depth profiling and angle-dependent XPS analysis along with the access for elemental mapping.
2.	Analysis Chamber	<p>i. The analysis chamber must be made up of bakeable UHV standard chamber with Mu-metal/ similar alloy for magnetic field shielding. Also the components inside the chamber should be shielded from magnetic field to have no magnetic interference.</p> <p>ii. The chamber should have sufficient number of ports to accommodate monochromatic X-ray source, hemispherical energy analyzer, flood gun, sample introduction port, sample manipulator, vacuum pumping system, pressure measurement port, electron/ion source etc.</p> <p>iii. The chamber must have optical camera / microscope along with the suitable light source to view the analysis position on the samples.</p> <p>iv. Chamber must be sealed with appropriate UHV compatible gaskets and have an entrance / load lock chamber with a pressure measuring device (upto 10^{-6} mbar) to allow rapid introduction of samples into the main analysis chamber.</p>
3.	Sample stage manipulator & Sample holder	<p>i. Sample stage must have software-controlled minimum 4 axes (movement in X, Y, Z & continuous rotation) or preferably with 5-axis (tilt). The stage movement should be motorized for the smooth transition and software controlled.</p> <p>ii. The stage manipulator should hold sample holder to place at least 6 samples at a time or a single sample holder should have a size of 50 mm or higher.</p> <p>iii. The stage should allow software controlled angle dependent XPS measurement (0 to 80 degree or wider) at a resolution of ≤ 0.5 degree. While angle is being changed, the region of interest must remain the same.</p> <p>iv. Sample holders suitable for powder, thin film and thick sample characterization must be provided (at least five for each type of sample).</p> <p>v. A suitable sample holder should be provided for angle-dependent measurement.</p>
4.	X-ray Source	i. The system must have monochromatic Al K α X-ray source

		<p>ii. The analysis area must be in the range of $\leq 50 \mu\text{m}$ to $\geq 300 \mu\text{m}$ and should have error-free positioning of the X-ray beam to allow small area XPS analysis.</p> <p>iii. The monochromator should have high resolution and sensitivity to carry out X-ray Photoelectron Spectroscopy.</p> <p>iv. The ultimate XPS energy resolution from conducting as well as non-conducting sample must be at $<0.50 \text{ eV}$ (FWHM) measured on Ag $3d_{5/2}$ and $< 0.85 \text{ eV}$ for O-C-O component on polyester sample. The tenderer must specify how this requirement is met.</p>
5.	Energy Analyser	<p>i. The electron energy analyser must be a 180 degree hemispherical analyser (HAS) with a mean radius of 125 mm or more.</p> <p>ii. The energy scan range should be at least 10 eV to above 1400 eV or wider.</p> <p>iii. Proof for detector performance should be mentioned.</p> <p>iv. Appropriate acquisition and analyzer control software with Windows OS.</p>
6.	Vacuum System	<p>i. The load lock chamber should be evacuated by Turbo molecular pump (TMP) with backed oil-free scroll pump or equivalent.</p> <p>ii. The analysis chamber should be fitted with TMP with oil-free scroll pump/ ion pump Optional: titanium sublimation pump (TSP)</p> <p>iii. Pumping speeds:</p> <ul style="list-style-type: none"> • TMP (for load lock chamber better than 60 l/s, with N₂) • TMP/ Ion pump (for analysis chamber better than 250 l/s, with N₂) • TSP (better than 450 l/s, with N₂) <p>iv. These pumps must provide a guaranteed pressure around 5×10^{-9} mbar or better without the sample in the analysis chamber. The supplier should clearly mention the pressure obtained without the sample along with the pump details.</p> <p>v. All the pumps and valves must be controlled from system software with manual overriding options and all the pressure read outs should be supplied with suitable pressure gauges for both the chambers.</p> <p>vi. A set of safety features to protect the integrity of vacuum system, vacuum components and electronics in case of power failure has to be provided.</p>
7.	Charge neutralization system	<p>Robust charge neutralization mechanism for, especially for non-conducting samples using suitable ion or electron beam. Charge neutralization should be possible during depth profiling analysis.</p>

		The capability of charge neutralization must be demonstrated on PET or equivalent with FWHM < 0.85 eV for O=C-O peak in C1s spectrum.
8.	Depth profiling	The instrument must have the capability for efficient and effective depth profiling of inorganic and organic samples using Ar ion sputter gun. The Ar ion gun should provide ions with variable energy at least between 0.15 to ≤ 5 keV. Need to mention (i) whether depth profiling is computer controlled and (ii) sputtering rate of the ion gun or sample current at 2keV beam for oxide/metal thin film system
9.	Sensitivity	The minimum sensitivity must be demonstrated as follows: i. ≥ 50 kcps on $\geq 50 \mu\text{m}$ analysis area at a resolution of ≤ 0.6 eV (for FWHM Ag 3d _{5/2}) ii. ≥ 2 Mcps on large analysis area at a resolution of ≤ 1 eV (for FWHM Ag 3d _{5/2})
10.	Standard samples	The standard samples of Ag, Au, Cu and PET should be provided for calibration.
11.	Software	i. Supplier must provide licensed software for the complete XPS operation including option to make changes manually. ii. System must have ability to be controlled remotely via internet/network. iii. There must be at least two data processing software user licenses (or dongles) for XPS spectra analysis through peak identification using the library and peak fitting. iv. The latest version software must be provided with free update. The hardware should also be compatible with latest window based system. v. XPS database/ library for different elements and materials including oxides and polymers must be provided. The supplier should give complete information on the library along with available elements, duration and the update details
12.	Computer	Current generation PC (Intel Core i5/7) with 64 bit, Windows 7 or 10 or suitable Windows version of OS, ≥ 8 GB RAM, ≥ 1 TB Hard disk capacity which supports the software and smooth operation of XPS. PC should have a monitor with ≥ 24 " TFT screen size along with a keyboard, mouse along with a printer. PC should have CD/DVD writer, Ethernet, and USB ports.
ACCESSORIES		
13.	Cooling and Compressor Systems	A branded cooling unit with pump and a compressor with adequate capacity (as per the requirements of the system) must be supplied to support the quoted system with <ul style="list-style-type: none">• Safety interlock for cooling water• Particle filter and flow rate meter
14.	Power backup	Branded on-line UPS system to support all the related system for at least 2 hours with battery backups.

OTHERS		
15.	Warranty	A Comprehensive warranty for a period of Three years for the entire system with all the accessories should be included in the Tender.
16.	Annual Maintenance Contract (AMC)	The cost of the Annual Maintenance Contract (AMC) for the period of two years after completion of the warranty period i.e. during 4 th and 5 th year of the instrument operation should be mentioned in the quotation
17.	Manpower	The vendor should provide a trained operator to operate and maintain the XPS system for a period of 4 years should be included in the Tender separately.
DESIRABLE		
18.	Mapping (elemental/chemical)	The system should provide elemental maps with a resolution of ≤ 50 μm .

ANNEXURE - I

BIDDER'S WARRANTY

The Registrar, Pondicherry University, Puducherry invited Bid Document for Supply of X-ray Photoelectron Spectrometer at Central Instrumentation Facility, Pondicherry University and M/s. _____

Thereinafter referred to as "The Bidder" having carefully studied all the bid documents, Specifications, etc. accompanying the tender for supply of the _____ (Name of the Instrument) and desirous to submit the bids as per the Tender Document advertised vide Notification-TenderNo. /..... **dated**.....

DO HEREBY WARRANTY THAT

1. The bidder is familiar with all the requirements of the bid documents.
2. The bidder has investigated the site and satisfied, he regarding the character and scope of the work and local conditions that may affect the supply or its Performance.
2. The bidder is satisfied that the supply can be performed and completed as required in the contract.
4. The bidder accepts all risk directly or indirectly connected with the performance of the contract.
5. The bidder has had no collusion with other contractors, with any of the men of Pondicherry University, Puducherry, or with any other person in preparation of the bid.
6. The bidder has not been influenced by any statement or promise of the Officials of Pondicherry University, Puducherry but only by the bid documents.
7. The bidder is financially solvent.
8. The bidder is experienced and competent to perform the contract to the satisfaction of the Co-ordinator, Central Instrumentation Facility, Pondicherry University, Puducherry.
9. The statements submitted with the bid are true.
10. The contractor is familiar with all general and special laws, acts, ordinances, rules and regulations of the Municipal, District, State and Central Government that may affect the work, its performance or personnel employed therein.
11. All the terms & conditions of the Supply Order will bind the bidder once his quote is accepted and supply order issued.

Signature of the Bidder

ANNEXURE - II

BANK GUARANTEE

Pondicherry University
Bharat Ratana Dr. B R Ambedkar Administrative Building
R Venkataraman Nagar
Puducherry 605 014

This guarantee made on this _____ day of _____ 201_ by _____ Bank having its Registered Office at _____ and one of its branches at _____ (hereinafter referred to as “the Guarantor” which expression shall, unless it be repugnant to the subject, meaning or context thereof, be deemed to mean and include its successors and assigns) in favour of the Pondicherry University, Puducherry 605 014 represented by its Registrar, having his office at R. Venkataraman Nagar, Kalapet hereinafter referred to as the “University” which expression shall include his successors in office for an amount not exceeding Rs. _____ (Rupees _____ only) at the request of M/s. _____ (more fully described hereunder)

2. Whereas the University has placed work Order No: PU/ _____ dated _____ for _____ with M/s. _____ having its office at _____ and hereinafter referred to as the “Contractor” which expression shall include their successors and assigns.

3. And whereas the Contractor has accepted and agreed to execute the work as per the work order as per undertaking / agreement dated _____ within the time stipulated and in the manner specified therein.

4. And whereas the University has called upon the Contractor to furnish Bank Guarantee for the sum of Rs. _____ (Rupees _____ only) for fulfilment of the said work as specified in the work order and as agreed to by the Contractor.

5. And whereas the Contractor has requested the Guarantor herein to furnish an irrevocable and unconditional Bank Guarantee in favour of the University for an amount of Rs. _____ as guarantee towards execution of the work as agreed to by the contractor to the University.

6. Now, therefore, we _____ Bank, the Guarantor herein, do hereby irrevocably and unconditionally Guarantee the payment to the University the sum not exceeding Rs. _____ (Rupees _____ only) in the event of any breach, failure, neglect or inability on the part of the Contractor in the execution of the said work, on demand without reference of the matter to the Contractor and without any prior consent of the Contractor, at all times throughout the period of execution of the work, without demur, cavil or argument or delay.

7. The Guarantor agrees and undertakes that the decision of the University as to whether the contractor has committed any breach of the obligation with respect to the work to be executed, and the quantum of amount therefore payable by the Contractor to the University in that regard, shall be final, binding and conclusive as against the Guarantor and the Guarantor shall make payment accordingly, on demand by the University.

8. The Guarantor further agrees and undertakes to pay to the University the amount demanded by the University irrespective of and notwithstanding any dispute raised by the Contractor in any suit or proceeding before any judicial forum relating to the Contracted work and the Guarantor's liability under this Guarantee shall be absolute and unequivocal.

9. This Guarantee is issued subject to the condition that the liability of this Guarantor under this guarantee is limited to the maximum of Rs. _____ (Rupees _____ only) and the guarantee shall remain in full force up to _____ and cannot be invoked otherwise than by a written demand or claim by the University for the payment of the said amount by the Guarantor on or before _____ or any extended date as decided by the University.

10. This University shall have the fullest liberty without our consent and without affecting in any manner our obligations hereunder to vary any of the terms and conditions of the contracted work or to extend time for performance of the work by the Contractor. Any change to the contracted work shall not in any way release the Bank (Guarantor) from liability under this Guarantee and we waive notice of any such change. The University shall have full liberty to forbear or enforce any of the terms and conditions of the contracted work.

11. This Guarantee shall not be affected by any legal limitation, disability or other circumstances relating to the Contractor or the Guarantor.

12. This Guarantee shall be valid for the period upto _____ and shall extend further and beyond _____ for such period as determined by the University.

13. The Guarantor undertakes not to revoke this guarantee except with the previous consent of the University in writing.

14. Notwithstanding anything contained herein:

- Our liability under this guarantee shall be limited to Rs. _____ (Rupees _____ only)
- This guarantee shall be valid upto _____ and for such further period as determined by the University for fulfilment of the contract.
- We are liable to pay the guaranteed amount or any part thereof under this Bank Guarantee only and only if you serve upon us a written claim or demand on or before _____ or such extended period / date.

In witness whereof, this Guarantee has been executed by _____ for an on behalf of the Bank (Guarantor) on the day, month and year first above written.

SIGNATURE AND SEAL

NAME OF THE BANK (GUARANTOR):

ADDRESS: