

DIVISION OF AGRICULTURAL PHYSICS
ICAR-Indian Agricultural Research Institute, Pusa, New Delhi-110012

File No. AP/NePPA/2023-24/01

Dated: 09/08/2023

Tender Notices

Online quotations are invited from reputed Manufacture/Dealer/Supplier in two bid system (Technical bid & Financial bid) for purchase of following Scientific Equipment/Items on behalf of Director ICAR-Indian Agricultural Research Institute, New Delhi. The last date for submission of Bid **28.08.2023** at 1.00 PM. The bid will be opened on dated **29.08.2023** at 15.00 hrs by the prescribed committee.

Please visit www.iari.res.in for Details Rules and Regulation and Log on Gem Portel for online.

Sl. No	Name of Scientific Equipment/ Item	Quantity
1.	Double Beam Flame Atomic Absorption Spectrophotometer	One

Instructions to the bidder and terms & conditions of tender:

The rates quoted shall be valid for a minimum period of 180 days from the last date fixed for submission of bid.

1. The rates quoted shall be free of cost delivery and installation at the Division/Unit of Agricultural physics y, IARI, New Delhi – 110012. However, equipment quoted in foreign currency must be quoted on FOB/ CIP basis
2. Custom Duty Exemption Certificate (CDEC) will be issued only when the bid is quoted in foreign currency in case of foreign made items only and meant for IARI
3. Full specifications of the item/article quoted for shall be given in the quotation.
4. If taxes, duties or any other charges over and above the rates quoted livable, actual percentage of such taxes/duties/other charges should be clearly indicated.
5. **EMD of Rs. 90000.- (Ninety thousand only)** should be in the form of D.D./Pay Order/Fixed Deposit Receipt/Bank Guarantee from commercial bank drawn in favor of Director, IARI payable at New Delhi. The original EMD should be submitted to the Tender Inviting Authority on or before the last date and time of offline bid submission. The details of D.D./Pay Order/Fixed Deposit Receipt/Bank Guarantee physically sent, should tally with the details available in the scan copy and the data enter during the bid submission time otherwise the uploaded bid will be rejected.
6. No interest on security deposit and earnest money deposit shall be paid by the Institute to tender.
7. The EMD shall be refunded to the unsuccessful bidders after finalization of the quotation. In case of successful bidder, it can be adjusted towards security deposit which is 5-10% of the order value in the form of D.D./Pay Order/Fixed Deposit Receipt/Bank Guarantee from commercial bank drawn in favor of Director, IARI payable at New Delhi and shall remain valid for 60 days beyond the date of completion of all contractual obligation of supplier including warranty obligation for the equipment/goods costing Rs.1.00 lakhs (Rs. One Lakh) or more. Here would however, be no performance security deposit for equipment/goods costing less than Rs. 1.00 lakh (Rs. One Lakh).
8. One year warranty has to be invariable provided by the firm. In case, there is any variation in the warranty period given in the specification of the item/equipment, the warranty period shall be the final as given in the specification.
9. Payment will be made by mode of e-payment to the supplier/firm after satisfactory completion of work and receipt of pre-receipt bills triplicate.
10. The Director IARI, New Delhi reserves the right to accept or reject any or all the quotations either in full or in parts without assigning any reason.
11. Quotations not complying with the above conditions are liable to be rejected.
12. TIN/VAT/PAN/C.S.T. Nos. Scanned copy of TIN/VAT/PAN/C.S.T. Nos may be attached with the bid.
13. In case, any dispute arising out of this contract shall be subject to the jurisdiction of Indian laws & Court at New Delhi. Sole arbitrator is appointed by the Secretary, ICAR, and New Delhi. His decision will be final and binding on both parties (Supplier and Purchaser)

14. The successful bidder has to execute the indented Job/Work as mentioned in the supply order placed with them within the stipulated period as given in the supply order placed by this office failing which 2% per week and maximum of 10% deduction as liquidated damage charges will be made from the bill in case the job is not completed within the given stipulated period.

Firms should 3 years experience in this line, proof should be enclosed.

Sl. No.	Description / Specification of the Equipment/ Item	Approximate Cost
1.	<p>Name of Equipment : Double Beam Flame Atomic Absorption Spectrophotometer</p> <p>Specification : As per Annexure -A</p>	Rs.30/- Thirty Lakh only

Asstt. Admn. Officer

Supply, Installation & Training of Double Beam Flame Atomic Absorption Spectrophotometer

- ❖ External PC-controlled new generation fully automated flame Atomic Absorption Spectrometer fitted with automated 8-lamp or more turret & automatic alignment with strong deuterium background correction for analysis of multi-elements.
- ❖ Lamp turret should have independent power supply to each lamp each with two heating circuit for lamp preheating operation. The turret must have comparability for lamps from other AAS manufacturers.
- ❖ The system should have double beam optics with optional purge function for improved UV transmission.
- ❖ All optics should be quoted with proactive seal and double sealed with special light proof cover for enhanced stray light rejection and prevention of dust contamination.

Sr. No.	Description	Specification
1	Spectrometer Type	Czerny-Turner type, encapsulated, purgeable with focal length minimum at 350 & 389 mm. or Littrow design with motorized drive for automatic wavelength selection and peaking with Focal Length in between 260 to 290 mm The Monochromator should provide selection of a single & true double beam operation within one instrument.
2	Wavelength range	184 / 185-900 nm or wider
3	Monochromator Grating	Holographic grating with 1800 line/mm (Minimum)
4	Wavelength accuracy / Repeatability/ reproducibility	Wavelength reproducibility 0.005 nm.
5	Sensitivity (Cu)	0.9 A for Cu or Flame: (Cu 324) 0.017 mg/L 1 %Abs using a 10 cm burner head Or >0.7 A for Cu or Flame: (Cu 324) 5 mg/L <0.5% Abs using a 10 cm burner head
6	Slits	Automated slit selection from 0.2, 0.3, 0.5, 0.7, 0.8, 1.2 nm or wider
7	Detector	High Sensitivity solid state detector or Wide range segmented solid-state

		detector or better
8	Lamp	Automated 8 lamps or more turret with Hollow Cathode Lamps for elements Fe, Cu, Zn, Mn, Pb, Ni, Cd, As, Hg, Cr Lifespan of each Lamp: 2000 hr or more
9	Background Correction	Deuterium background correction- Deuterium background correction should be there
10	Burner system	Automated setting of burner height for each element. System must have all Titanium 5 cm burner for both air/acetylene and acetylene/N ₂ O flame. There should be provision to upgrade the system with LPG flame.
11	Nebulizer System	Adjustable nebulizer with inert platinum/Rhodium/Iridium capillary.
12	Spray Chamber	Spray chamber should be capable of handling acids, alkalis and organic solvents.
13	Gas Controls	Should be programmable (gas management system) for fuel & oxidant gas.
14	Safety Functions	Safety systems should provide indication for main power control, ensure correct operating fuel gas and oxidant pressure are maintained to check flow rate. Control on use of incorrect burner head /Multiple sensors monitoring burner head, siphon system and gas management system (GMS) Automatic ignition and shut down of flame, incl. in case of power outage or gas pressure drop Nebulizer-Burner system with quick-lock for easy replacement. Or All safety interlocks built-in and additional features like burner head interlock, nebulizer/end cap interlock and drain interlock should be built in. The electronic circuit boards should be conformally coated for electronic safety and corrosion resistance.

15. Accessories

A	Exhaust Hood for AAS Made up of S.S.304, of length 10ft. & Blower motor of capacity approximately 2800RPM & 1/8 hp with all necessary fittings with additional flanges, angles etc.	1 No
B	Nitrous Oxide Gas Cylinder with Two stage Cylinder Regulator Brass Chrome plated body with S.S. Diaphragm with Preheater	1 No
C	Air-Acetylene Gas Cylinder with Two Stage Cylinder Regulator with S.S. Diaphragm	1 No
D	Argon Gas Cylinder with Two Stage Cylinder Regulator with S.S. Diaphragm	1 no
E	Oil free compressor of approximately 20 litres Storage tank, Safety valve, Pressure Switch, Drain valve, Pressure gauge, Non-return valve, Needle valve, Solenoid valve etc. 230V, 50 Hz, 1 Phase	1 No
F	Gas Purification & Control Panel single stage for Acetylene, N ₂ O & Compressed Air Gas	1 No
G	Standard fittings like Nuts, Ferrules, Union, Couplings, clamps, Hardware etc	1 No
H	PC compatible with above instrument having minimum features Processor- 4 th GenCore-i3 Processor or better Display - 54.61(or higher) cm Full HD IPS LED Operating System- windows 10 or latest Graphics-Dedicated Graphic memory-2GB Dedicated Graphic processor- Storage – Hard disk drive – 500 GB, System memory - 4GBDDR3 Laser jet printer compatible with above computer (B/W)	1 No
I	Online UPS for power back up (minimum 5 KVA and 1 hour backup for full system)	1 No
J	Two number of Hard Copy of Operating Manual with Soft copy.	
K	Two number of Hard copy of Service manuals / maintenance manual with Soft copy.	
L	NIST Traceable single element calibration standards for above elements	1 No
16	50 or more positions in auto sampler should be quoted for flame	1 no
17	Any other accessories, if required for installation and successful operational of AAS (Flame, Graphite and Hydride) should be quoted	1 no
18	Separate 10 cm titanium burner head for Air – Acetylene flame and 5 cm titanium burner head for Nitrous oxide – Acetylene flame should be supplied with the system. The burner should be compatible to the system.	1 no
19	Gas Control: Oxidant and fuel monitoring should computer controlled, remote ignition system, auto adjusted acetate flow when switching to or from nitrous oxide acetylene operation	1 no

20	System should be with Dual Pump Hydride vapor generator attachment with electro thermal heating of tube up to 1000 °C, for estimation of hydride forming elements. The AAS should have easy, reproducible change between burner head and Cell Module with quick-lock. Should have facility for upgrade-module for “Hg” Amalgamation unit (Gold- Platinum mesh) as add-on for best detection limits for Mercury, protected by drying membrane.	1 no.
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- ❖ System should provide highest safety standard with coded burner heads, sensor control of flame, as type and pressure, pressure relief valve in the spray chamber, siphon sensor control & UV sensor for flame detection. Automated height adjustment of the burner head, Emission mode with baseline correction possibility.
- ❖ System should be future ready for up gradation with auto burner cleaning in N₂O flame to avoid suite formation and injection switch for micro volume sample injection for high acidic or salt containing samples.
- ❖ Specialized AAS software package with excellent and exhaustive cook-book should be included. Software should have options for automated optimization of gas composition and burner head position for method development of unknown samples.
- ❖ The AAS should be supplied with 2-year warranty against all manufacturing defects. Warranty should include all parts which need to be replaced due to dust, high salt or acid accumulation etc.
- ❖ CMC for 3 years should be quoted separately from main bid as optional.
- ❖ The above specification should be supported by a printed and authentic technical literature.
- ❖ Instrument should be certified from any reputed international authority.
- ❖ Demonstration of quoted model / product.
- ❖ List of users of the instrument in India
- ❖ Recent Supply order copy of the Govt institutes.
- ❖ Manufacturer should have facility in Delhi to provide service for smooth functioning of the instrument after sales.
- ❖ Safety features must be there
- ❖ Suitable for laboratory table to place the instrument along with all accessories

Installation, Training & Maintenance:

Installation & commissioning of the equipment should be carried out by supplier at user's site. Operational, basic troubleshooting and maintenance training should be imparted to user's operator. 10 days training for complete operation of instrument after installation.

Supplier must have factory trained engineers stationed in India to maintain the system and carry our AMC.

Supplier must be reputed manufacturer/ authorized agent of manufacturer and should offer brand new equipment

