SARVODAYA SHIKSHAN MANDALI'S
**SARDAR PATEL MAHAVIDYALAYA**
**Ganj Ward, Chandrapur, Maharashtra, Pin - 402402**

Tender Notice

Ref. no.: E-Tender/PMUSHA/02/2024-25 Date: 07-03-2025

Supply of Laboratory Equipment's for Sardar Patel Mahavidyalaya, Chandrapur
e-Tendering portal_https://mahatenders.gov.in

| Sr. No. | Name of The Equipment | Administrative Sectioned Amount Including GST (Rs.) | EMD (RS) | Blank Tender Document Cost | Duration for Supply of Equipment |
|---|---|---|---|---|---|
| 1 | Atomic Absorption Spectrophotometer-Flame | 34,00,000/- | 34,000/- | 5,000/- | Eight week from the release of work order |
| 2 | Fluorescence Spectrophotometer | 18,90,000/- | 18,900/- | 5,000/- | |
| 3 | FT-IR Spectrometer | 15,00,000/- | 15,000/- | 5,000/- | |

| Tender Activities Schedule | Scheduled Date Time Venue |
|---|---|
| Start date of bid submission | 07-03-2025 |
| Last date of bid submission | 17-03-2025 up to 02:00 PM |
| Technical Bid Opening | 19-03-2025 at 02:00 PM |
| Financial Bid Opening | Bidders will be informed through e-Tendering portal by message and E-mail after technical evaluation of bids. |
| Validity of bids | 90 days |

**Note:**

1. e-Tender details shall be available up to last date of bid submission on e-Tender portal https://mahatenders.gov.in Tenders by Organization -- State Project Directorate (RUSA) Mumbai||Sardar Patel Mahavidyalaya, Chandrapur
2. Bidders need to be enroll on https://mahatenders.gov.in to get login credentials and then map their Class III Digital Signature (Signing Certificate) from USB Token.
3. 24x7 Technical Support Helpdesk - Call: 0120-4001002 / 0120-4001005 / 0120-6277787.
4. Tender Inviting Authority shall not be bound to accept the Lowest rate L1 bid.
5. Tender Inviting Authority reserves the right to cancel the Tender in whole or in part without assigning any reason at any stage during the tender process.
6. The bidders are requested to quote separately for each instrument for technical & financial bid. Bidder can participate in all three/two/one equipment tendering process.

Principal,
SARDAR PATEL MAHAVIDYALAYA,
CHANDRAPUR

Principal
Sardar Patel Mahavidyalaya
Chandrapur

Signature Not Verified
Digitally signed by PRAMOD MURLIDHAR KATKAR
Date: 2025.03.07 15:48:20 IST
Location: Maharashtra-MH

# Specification

## Technical Specifications for Atomic Absorption Spectrophotometer-Flame

Fully automated, True double beam, vibration free optical system, PC controlled Atomic Absorption Spectrophotometer system with absorption and emission capability with deuterium background correction with following specifications and accessories. The equipment must come from a reputable brand in the market with direct manufacturer support for application.

| Sr. No | Component / Particular | Specification |
|---|---|---|
| 1. | Vendor eligibility criteria | A list of at least 3 institutes/ R&D units/industries where similar instruments have been supplied in India, including contact details (name of the person- in-charge, email, and phone number), is to be provided. The quoted model's three performance certificates/Installation report in reputed institutions in India should be enclosed duly signed and stamped by concerned authority. |
| 2. | General | Fully External PC-controlled True Double Beam Atomic Absorption spectrometer system with Flame. Detector must be employed with dedicated areas for sample and reference beams for simultaneous background correction. |
| 3. | Country of origin and condition | • Need to quote the Country of Origin & if they are Dealers or Resellers, should have to declare the OEM supplier & it's country of Origin.<br>• Vendor needs to submit at least 5 Performance Certificate/Installation reports from their user of the quoted model and should facilitate the demonstration of the equipment quoted during technical evaluation as & when asked by buyer/customer.<br>• Vendor should submit at least 5 Research papers or articles, or Application Notes on Application or features asked in the tender. These all papers should be available in public domain.<br>• Vendor should have Application Lab in India to support method development and trouble shooting. |
| 4. | Turnover and Income tax payment details | Vendor need to provide Turnover and Income tax payment details of last three years. |
| 5. | Warranty | Three years warranty. |
| 6. | Monochromator | Littrow or Czerny Turner or equivalent design with motorized drive for automatic wavelength selection and peaking. |
| 7. | Wavelength range | 184-900 nm or better. |
| 8. | Diffraction grating | 1800 lines/mm blazed in both the UV and Visible regions. Grating area 64 x 72 nm. |
| 9. | Sensitivity | >0.8 Absorbance with precision of <0.5% RSD from ten 5 second integrations for 5 mg/L Cu solution. |
| 10. | Focal length and Dispersion | Focal length >260 mm. Dispersion 1.6 nm/mm or better. |

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| 11. | Spectral Bandwidths | User selectable automatic variable slit widths from 0.2 to 2.0 nm or better with variable increment at their optimal silt height. |
| 12. | Sample Introduction System | a. System should have Modular sample introduction system consisting of a quick-change spray chamber, burner head and nebulizer.<br>b. High-Sensitivity corrosion-resistant plastic Nebulizer with Platinum/Iridium Capillary should be there with system.<br>c. The introduction system must be equipped with a high-strength inert mixing chamber, angled to ensure proper drainage.<br>d. The system should have separated 100mm Air-Acetylene.<br>e. The Burner head adjustment in vertical and horizontal direction and should easy to set.<br>f. The flame shield should be polymer-coated for resistance to corrosion from acidic fumes from the environment or from the samples<br>g. The sampling compartment should be extremely spacious to allow easy access to change burner heads or nebulizers. |
| 13. | Automated Lamp Selection | Four or more lamp horizontal/vertical mount with built-in power supplies cable less hollow cathode lamps. Computer controlled lamp selection and alignment. Lamp elements and recommended operating currents should be automatically recognized and set when hallow cathode lamps and electrodeless discharge lamps are used. The software should monitor the lamp usage in hours. |
| 14. | Deuterium Background Correction | Built-in continuum source double-beam background correction using a high-intensity deuterium arc lamp. |
| 15. | Detector | Advanced Wide-range segmented solid-state detector, including a built-in low-noise complementary metal oxide semiconductor charge amplifier array (CMOS) or photo-multiplier tube detector (PMT). Wavelength range: 184–900 nm or better. Operator selectable read time from 0.1 to 120 seconds. |
| 16. | Corrosion Resistance | All the Printed Circuit Board Assemblies should have conformal coating for complete resistance to corrosion and to act as protection against moisture, dust, chemicals, and temperature extremes. |
| 17. | Lamps | The coded hollow cathode lamps to be supplied with the system for estimation of As, Fe, Cr, Cu, Cd, Ni and Mn. The warranty on hallow cathode lamps must be at least 5000 mA hours. One multielement lamp for element Cr-Co-Cu-Fe-Mn-Ni should be quoted. |
| 18. | Gas Controls | Fully computer-controlled with oxidant and fuel monitoring. Touch screen or keyboard-activated remote ignition system with air/acetylene. Acetylene flow should automatically be adjusted prior to the oxidant change when switching to or from nitrous oxide/acetylene operation. All safety interlock built-in and additional features like Burner Head Interlock, Nebulizer/End Cap Interlock and Drain Interlock to be built in. The gas flow system should be software controlled flame ignition, and automated changeover of oxidant flow from acetylene to nitrous oxide. |
| 19. | Safety Functions | Safety Interlocks should prevent ignition if the proper burner head, the nebulizer/end cap, or the burner drain system is not correctly installed; the liquid level in the drain vessel is incorrect; or gas pressures are too low. Interlocks should also be automatically shut down burner gases if |

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| | | a flame is not detected, or if any of the other interlock functions are activated. Provision should be included for safe shutdown from all operating modes in the event of a power failure |
| 20. | Certification | The instrument should be developed and produced in compliance with ISO certification standards viz. ISO 9001, and ISO 13485. The instrument should be provided with an AA software which provides required control parameter for GLP and instrument performance validation. The software should be easy to use and should have flexibility for lamp setup, flame control, parameter selection, and sample analysis. The instrument should have electronic protection as defined in EN61010-1. The instrument should bear the CE Mark and the CSA/NRTL certification mark. |
| 21. | System Power Requirements | 100-230V (±10%), 50/60 Hz (±1%), single phase alternating current, 800 VA (maximum). |
| 22. | Software/PC configuration | Should be an easy-to-use instrument software featuring wizards that guide users through method and sequence development, and method templates for rapid development of commonly used methods.<br>Included PC should meet the minimum requirements such as desktops with the processer: $12^{th}$ generation Intel core i-7 latest configuration, Including operating system of Windows 10 professional, monitor 28 inches or more LED monitor, 2TB HHD, 7200 RPM, Intel HD Integrated Graphics, 4 GB x 2 DIMM 1600 MHz UDIMM DDR 3, Warranty 3 years onsite, Recovery DVD: Yes, and its power cord. $2^{nd}$ Serial Port, WiFi 6235. Microsoft office; security software (3 years), keyboard and mouse. Laser monochrome printer should be provided for operation of instrument through PC. The mode of operation should include: Energy profile, emission, absorbance, standard calibration, standard addition, curve fit operation – liner and quadratic. |
| 23. | Safety standard | The instrument should bear the CE Mark and the CSA/NRTL Certification Mark or government certified safety standard. |
| 24. | Other requirements | The instrument should be free from vibration, dust-free, ambient temperature +10°C to 35°C, with a change in 3°C per hour. Relative humidity: 20 to 80% non-condensing. One 6 KVA (branded company) online UPS with at least 60 minutes backup should be supplied. System should have facilities of repeat of result of same sample and data management. |
| 25. | Technical support | On installation, commissioning and training by factory-trained Engineer is required. The Tenderer must have a local dedicated team, consists of sales, engineers and application engineers for optimum support of the system. The supplier must demonstrate that it has a proven appropriate set-up and capability to provide after-sales service efficiently and effectively. Details of service centre in Maharashtra with contact details should be provided. Warranty for the instrument should be at least 36 months from the date of installation of instrument. The warranty shall commence only upon successful completion of the Acceptance Test or commissioning. |
| 26. | Test reports | Availability of test reports from central government/NABL approved / ILAC accredited laboratories to prove the conformity to the specification (Test reports to be submitted by the sellers, Mandatory). |
| 27. | Other items | • Fume Hood System. |

| | | |
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| | | • Two Acetylene Cylinder with dual stage regulator, gas purification panel, gas lines, complete installation in vendor/supply scope.<br>• Air Compressor with fully automated electrical air dryer to remove moisture.<br>• Certified calibration standards of 1000 mg/L of seven elements mentioned above 500 mL each. |
| 28. | Other accessories | Sample capillary – 1no<br>Instrument filters- 2 nos<br>Nebulizer cleaning accessory should be supply to clean nebulizer of clogging.<br>Impact bead – 1no |
| 29. | Operation & Maintenance Training | Five days training to be provided to 2 to 3 staff members on all operations including software & hardware at the buyer location on installed equipment. |
| 30. | Vent & fuming hood | Stainless steel fuming hood along with exhaust blower having efficiency to evacuate acid fumes of 6-7 m3/minute. |
| 31. | Accessories Cost | Please quote UPS/PC/Printer cost separately. |

**Supply, Delivery, Installation & Commissioning of a Fourier Transform Infrared (FTIR) Spectrophotometer**

**We intend to buy compact bench top FTIR system with software for analysis of Solid/Liquid should have following minimum specification**

**FT-IR Spectrometer with Platinum Diamond-ATR or other**

## **Quantity** Required: 01 Number

- FTIR Spectrometer must be compact in size and portable to easily carried from one place to another without any special support requirement.
- It must have permanently aligned interferometer which insures no optical misalignment due to any vibrations, shock or during transportation.
- Instrument must be coated with ZnSe or KBr beamsplitter and windows, which will have no impact due to humidity.
- Ceramic source with optimized light flux must be incorporated in the instrument.
- Solid State Diode based laser must be incorporated in the instrument.
- High sensitive temperature controlled DLaTGS with 24 bit dynamic Analog to Digital convertor detector must be quoted.
- Instrument must have gold coated corner cube mirrors, to ensure long life of mirror, best light reflectivity and parallel light reflection to sample and detector.
- Instrument must be quoted with Diamond monolithic crystal ATR or other ATr for direct analysis of powder, liquid, polymer and hard crystal samples.
- Instrument must perform automatic OQ and PQ and generate the report. It must be incorporated with Internal Validation Unit.
- Wavelength Range – 7000cm-1 to 400cm-1 • Wavelength Precision - < 0.0005cm-1 or better
- Wavelength Accuracy - <0.05 cm-1 or better.
- Spectral resolution better than 2cm-1.
- Photometric Accuracy – Better than 0.1% T.
- Signal to Noise Ratio - 10,000:1 or higher (1 min measurement time, spectral resolution 4 cm-1) or better.
- Instrument must be quoted with following additional warranties on critical components and main instrument must have 12 months warranty:
- 10 years warranty on Interferometer
- 10 years on Laser
- 10 years on Crystal
- 1 years on Source.

- (Warranty with complete description of what is covered and if preferable if quoted with part numbers)
- Software must have the following features.
    - Atmospheric Vapour Compensation
    - Spectral Comparison
    - Multiple spectra Handling
    - Reporting - Customized templates
    - Quantification software
    - Automatic accessory detection and performance verification
    - Automated workflow creation
    - Multiple project windows and multi monitor support
    - Live displays of data collection and spectral data preview
    - Full spectral processing and analysis tools (baseline correction,
    - spectral math, peak area, peak height, etc)
- Pre-defined reporting templates exportable to Microsoft Office Suite **Other requirements**
- Mention warranty period
- **One years** AMC after the warranty period.
- Printer, PC, USB provided by the buyer.
- The supplier must provide training to the staff members for the users of the instrument at site for three days after installation and commissioning.
- The tenderer must have local dedicated team comprising of engineer for support of the system .

**Software Specifications**

- The operating software must work with Microsoft Windows 10 or above.
- Should offer all standard function related to data processing, search, quantitation and data conversion Search parameter setting, Search of user library and commercial library, Creation of user library.
- Instrument must supply with validation program which can meet various global regulation as USP,EP,JP etc and Inspection and generation of inspection reports in compliance with GLP, ISO, GMP, etc
- Software should have preloaded macro application programs min 20 or more for contaminant analysis, identification, quantitation, and film thickness calculation as standard scope of supply

- Software should have a function which suggests corrective measures and method parameter troubleshooting advice for a given measured spectrum to acquire better-quality data.
- Software must be including standard contaminant analysis program which can be identify contaminant with high degree accuracy.
- Should be upgradable to client server connection with secured compliance features

**FTIR Should be supplied with following accessories**

1. Software controlled Self recognition diamond ATR accessories
2. Standard library of organic compounds, polymer, pharmaceutical, and inorganic compounds, food additives and contaminants etc
3. IQ/OQ qualification

Please quote UPS/PC/Printer cost separately

## Fluorescence Spectrophotometer

### PC controllable Fluorescence Spectrophotometer

**Technical Specifications**

- Main Features and functions: Ultra High sensitivity, **phosphorescence life time measurement at room temperature without any special accessories**, automatic pre-scan for unknown samples (200-750nm, expandable upto 900 nm with optional PMT) with functions like wavelength scan, 3-D measurements, 3D scan spectrum, time scan measurement, photometry mode etc.
- Sensitivity (Raman light of water) : Noise: Background - S/N 20,000 or above &
  Noise: Peak – S/N: 1000 or above at EX-350 nm, slit 10 nm, response 4 sec.
- Main features: Automatic Shutter control function for minimizing sample deterioration, fluorescence intensity standardization, 3D measurement, contour plotting (fluorescence / phosphorescence), Spectrum Correction, Zero point correction for measurement of weak UV excitation Spectra and emission spectra, Auto Scale function, Area calculation, time scan measurement.
- Minimum sample volume (Liquid) : 0.6 mL with standard 10 mm rectangular cell
- Light source : 150 W Long Life Xenon lamp with self-deozonating lamp
- Monochromator : **Stigmatic concave diffraction grating: 900 Lines/mm to avoid second order wavelength without using any inbuilt filters**, Brazed wavelength: excitation side 300 nm, emission side 400 nm
- Detector : High sensitivity Photo multiplier tube
- Photometric Range : -9999 to 9999
- Measuring wavelength range (on both EX and EM sides) : 200 to 900 nm (with extended PMT) , Zero-Order light
- Bandwidth :
  Excitation side: 1,2.5,5,10,20 nm
  Emission side: 1,2.5,5,10,20 nm
- Resolution : 1.0 nm
- Wavelength accuracy : ±1 nm
- Scan speed : Variable Scan Speed 30, 60, 240, 1200, 2400 12000, 30000 & 60000 nm/min
- Drive speed : 60000 nm/min
- Response : Response from 0 to 98% , 0.002, 0.004, 0.01, 0.05, 0.1, 2, 4 s
- Sensitivity: The SN ratio of the Raman line of distilled water is 300 and more (P–P) 1,000 and more (RMS)

- Wavelength scanning of max: 30,000nm/min or better

- Wavelength slewing speed of 25,000nm/min or better
- System should be able to operate in 15 to 35 deg C temperature range
- Operational humidity range of 30 to 80% (Below 70% with temperature higher than 30 deg C) with no condensation or better is required.
- PC software should be provided for the operation of SPECTROFLUOROPHOTOMETER. Software should be able to perform Conventional analysis such as:
- Spectrum: Excitation spectrum, fluorescence spectrum, synchronous spectrum.
- Software : Easy to use software with functionalities like Spectrum measurement, time scan measurement, quantitative measurement, phosphorescence life time measurement, quantum yield measurement, anisotropy studies, 3-Dimensional measurement etc
- Computer System : Latest suitable Branded PC with Windows 10 OS should be supplied
- Power Requirements : 220V AC, 50/60 Hz
- Solid sample holder
- Warranty : 1 year

**Buyer Added text based ATC clauses**

copy to the Buyer before the opening Bid date.
2. Copy of acknowledgement of latest Three Years Income Tax returns filled.
3. Copy of Balance sheet for last Two years (C.A. certified).
4. Copy of P.A.N. allotted by Commissioner of the Income Tax department.
5. Copy of GST registration With Current GST Return.
6. Shop Act Registration certificate.
7. Copy of PT registration Certificate With tax paid Clearance.
8. Bidder has to Submit last year's annual turnover of 50% of estimated cost, Turn Over Certificate (C.A. certified)
9. Bidder should submit Acceptance of ATC Document
10. Bidder should submit Bid Specific MAF Document, Manufacturer Authorization form

Below are the key terms and conditions:

## 1. Registration and Eligibility

- **Mandatory Registration**: All suppliers must have registered GST
- **Eligibility Criteria**: Suppliers must meet eligibility requirements per product category. For instance, they may need prior experience, financial capacity, or certification from authorized agencies for certain instruments.
- **Bid-Specific Authorization:** The Bidder should upload the Bid-Specific Authorization by the specific company with the authority person's stamp and signature.

## 2. Listing and Pricing of Products

- **Product Listing**: Suppliers must ensure the instruments listed on GeM include complete and accurate specifications, images, warranty details, and other required documentation.

- **Price Integrity**: Prices offered on GeM should be competitive and include all applicable taxes, duties, and delivery charges (unless mentioned otherwise). Sellers cannot offer the same products at higher prices than those in other markets.
- **No Price Discrepancy**: The prices listed should remain stable throughout the contract period, and sellers must honour these prices.

## 3. Order Acceptance and Fulfillment

- **Order Confirmation**: Once the institute places an order, the supplier must confirm it within a stipulated time frame, as per GeM portal rules.
- **Timely Fulfillment**: Suppliers must ensure timely delivery as per the terms agreed in the purchase order. Delays or failure to deliver on time could result in penalties.
- **Delivery Charges**: Delivery must be made to the specified location, with the supplier bearing all costs unless otherwise agreed in the contract.
- **Solvency Certificate**: The Bider should upload/submit the Solvency Certificate provided by the Bank Authority.

## 4. Quality and Compliance

- **Quality Standards**: Instruments supplied must meet the technical specifications and quality standards listed at the time of purchase. Substandard goods can be rejected.
- **Inspection and Testing**: The institute has internal and external experts inspecting and testing the instruments/equipment's upon delivery to ensure compliance with specifications. Suppliers must facilitate these inspections, and in case of discrepancies, the supplier must replace or rectify the issue.
- **Compliance with Industry Standards**: Products should comply with relevant industry standards, including legal and safety requirements.

## 5. Warranty and After-Sales Service

- **Mandatory Warranty**: According to industry/PM-USHA/UGC/RUSA standards, all instruments must have a **minimum/maximum** warranty period (mentioned by the supplier). Suppliers are responsible for repairs or replacements during the warranty period.
- **AMC**: The supplier must provide at least One years of annual maintenance contracts (AMCs) without charges.
- **Installation Training**: The training should include guidance on properly installing the equipment.
- **Hands-on training (Comprehensive Understanding / On-Site Training)**: The supplier must provide at least one hands-on training session ((e.g., 1 week)) to teachers and students without charge for three years from the date of purchase.
- **Internship training (Customization)**: The supplier must provide at least one Internship training session to the selected students (minimum 100 students per session) without charge for three years from the date of purchase.

- **Extended Warranty**: Suppliers must provide details of their extended warranties, which the institute can negotiate may also require.
- **Manufacturer's Facility**: In some cases, especially for advanced instruments, training might occur at the manufacturer's facility to ensure proper tools and resources.
- **Virtual Training**: Depending on the technology and geographical distance, online/virtual training can be an option, particularly for follow-ups or advanced sessions.
- **Experienced Trainers**: The manufacturer must provide qualified and experienced trainers with in-depth knowledge of the instruments and can handle trainee queries.
- **Language and Communication**: Trainers should communicate effectively in the institute's/buyer's preferred language or an interpreter should be provided if necessary.
- **Training Manuals**: The manufacturer must provide the trainees with comprehensive user manuals, guides, and other relevant documentation.
- **Digital Resources**: The trainees should be provided with access to online resources, such as video tutorials, troubleshooting guides, and FAQs, for future reference.

## Post-Training Support

- **Helpdesk Support**: After the training, the manufacturer should offer a helpdesk or technical support for a specified period (e.g., 6 months, 1 year, or 3 years) to assist with operational or technical issues.
- Mention the service centre in the city area (Maharashtra), a list of technicians and their contact numbers.
- **On-Demand Refresher Courses**: If needed, the contract can include options for refresher training after a certain period, either on-site or through virtual sessions.

## 6. Payment Terms

- **Payment through PFMS**: Instrument/equipment payments are made through the Public Financial Management System (PFMS), and suppliers must provide the necessary bank details.
- **Timely Payment**: Payments are typically made after the delivery and satisfactory inspection of goods. **The payment will be processed according to the RUSA Office regulations in Mumbai, as specified in order/letter No. 894/2024-25 dated 13 December 2024, i.e. only after this office has actually received the grants from the Government.**
- **No Advance Payment**: No advance payment is permitted.

## 7. Penalties and Liquidated Damages

- **Delayed Delivery**: Suppliers are liable for penalties if they fail to deliver the instruments within the specified time. Penalties are often calculated based on a percentage of the contract value per day of delay.
- **Liquidated Damages**: In case of non-performance or breach of contract, liquidated damages may be imposed on suppliers, usually deducted from the payments.

- **Blacklisting**: Continuous non-compliance, poor-quality products, or defaulting on orders can lead to blacklisting or suspension from the GeM portal.
- **Non-Blacklisted certificate:** Provide a non-Blacklisted certificate with a stamp of Rs 500/-, which should be Notarised.

## 8. Cancellation and Returns

- **Order Cancellation**: The institute reserves the right to cancel the order if the supplier fails to meet quality, delivery, or any other specified terms. In such cases, no payment will be made for the cancelled order.
- **Return of Goods**: If the supplied instruments do not meet the required specifications or are damaged, they may be returned at the supplier's expense for replacement or refund.

## 9. Performance Security

- **Forfeiture**: This deposit may be forfeited if the supplier fails to meet the contract obligations or deliver within the required timeline.

## 10. Dispute Resolution

- **Arbitration**: Any disputes arising out of the transaction will be resolved as per the **Arbitration and Conciliation Act**, 1996.
- **Dispute Settlement**: Suppliers must first attempt to settle any disputes amicably with the buyer/institute before escalating to arbitration.

**Principal**
**Sardar Patel Mahavidyalaya,**
**Chandrapur**

Signature Not Verified
Digitally signed by PRAMOD MURLIDHAR KATKAR
Date: 2025.03.07 15:51:29 IST
Location: Maharashtra-MH