



भारतीय सूचना प्रौद्योगिकी संस्थान, इलाहाबाद Indian Institute of Information Technology, Allahabad

An Institute of National Importance by Act of Parliament
Deoghat, Jhalwa, Prayagraj-211015 (U.P.) INDIA

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Call for Objection Notice

Ref. No.: IIIT-A/SP/OT/1992/ 2739/2026

Dated: 29.05.2026

Subject: Call for Objection against "supply and installation of Programmable Atmospheric-Controlled Sensing Devices (PAC-SD)" at IIIT-Allahabad, from M/s Scientific & Analytical Instruments, New Delhi as Original Equipment Manufacturer under the proprietary article certificate.

The Department of Electronics and Communication Engineering at IIIT-Allahabad has indented for procure the **Programmable Atmospheric-Controlled Sensing Devices (PAC-SD)** from M/s **Scientific & Analytical Instruments, New Delhi** under proprietary article basis as per provision of GFR 2017, directly through **M/s Scientific & Analytical Instruments, New Delhi** against their proposal and accepting their claim that they are only Original Equipment Manufacturer and authorized to quote for the **Programmable Atmospheric-Controlled Sensing Devices (PAC-SD)**, under the proprietary owner, manufacturer and distributor of **Programmable Atmospheric-Controlled Sensing Devices (PAC-SD)** across India and Abroad. It is also stated that **supply and installation of Programmable Atmospheric-Controlled Sensing Devices (PAC-SD)** is being marketed and maintained solely by **M/s Scientific & Analytical Instruments, New Delhi as an original equipment manufacturer** which satisfies all requirements of being a proprietary item.

Relevant documents are enclosed herewith for inviting objection /claims/comments, if any, from eligible manufacturer/supplier, before accepting the claim of earlier said manufacturer and accordingly making procurement under proprietary articles.

Objection/claim/comments, should be sent through email with all relevant supporting documents to info.purchase@iiita.ac.in with CC to the ar.sp@iiita.ac.in by mentioning above subject within **10 days** from the date of publication of this notice i.e., on **08/06/2026** up to **3:00 p.m.** After the due date, it will be assumed that no distributor/manufacturer/supplier has any objection/claim against the above said/article and the same will be considered as a proprietary article.

Yours Faithfully
For IIIT-Allahabad

(Y K Gautam)

Deputy Registrar (S&P)

Enclosure:

1. Proprietary Article certificate signed by **M/s Scientific & Analytical Instruments, New Delhi.**
2. Technical Specifications of the accessories by **M/s Scientific & Analytical Instruments, New Delhi.**



DEDICATED TO SERVICE

Scientific & Analytical Instruments

ISO 9001:2015 Certified

T-24, Ground Floor, Okhla Industrial Area, Phase-II, New Delhi-110020

Tel. : 91 11 41037156 Mobile : +91 9718525863, +91 9650866152

E-mail : sainanotech@gmail.com | saisales74@gmail.com | www.sainanotech.com

SAI/IIITA/ENQ-26019R1/26-27

Dated:23.05.2026

TECHNICAL SPECIFICATIONS OF PROGRAMMABLE ATMOSPHERIC-CONTROLLED SENSING DEVICES (PAC-SD) TEST BED

PROCESS TEST CHAMBER:

Process Test chamber fabricated out of non- magnetic stainless steel 304 Grade. Chamber is hemispherical provided with feedthrough for Electrical connections in the base and a Quartz Window on the top side. Chamber will house Substrate Heater with Substrate Holder. Chamber will have Port for Resistivity Measurement and Vacuum Port, Vacuum Release Valve, Vacuum Isolation Valve and spare Blank Ports for future upgradation and other measurements. Chamber will be evacuated to 10^{-2} - 10^{-3} mbar range before purging gas into Chamber and controlled through Valves.

SUBSTRATE HOLDER:

A 3" Substrate Holder is provided with Alumina Sheet fixed on the top of Substrate Holder for sample mounting. This Alumina Plate has four Electrically Insulated probes to measure specimen, current, resistance etc. from any point across the sample (30mm dia).

Probes have sharp bent tip at the free end and other end connected with electrical leads. The electrical are terminated with a high Electrical Feedthrough mounted onto the Port.

The Electrical Probes are made of chemically Inert and high Temperature compatible Material which does not lose its stiffness with thermal Cycling. A matching socket is provided for electrical connection outside the chamber.

HEATER & TEMPERATURE MEASUREMENT AND CONTROL:

A 3" dia Resistive Heater which can work in vacuum as well as atmosphere, Oxidizing & Reducing and condition. Heater can achieve Temp. Upto 400 Deg C with PID Temperature Controller. Power to the heaters is smoothly controlled by means of SSR Power controller. Heater is mounted on the Centre of Chamber. Temperature is controlled through Computer/ Laptop with Gas Purging process and recorded in PC through Software.

MICRO POSITIONER MANIPULATOR: 12 NOS.

12 Nos. Micro Positioner Manipulator having X, Y, Z movement of at least 5-10mm with a precision of 0.5mm per turn with Tungsten probe to measure DC Current with magnetic Base. Coaxial Cables with Pogo Pins will be provided to connect Manipulators with Source Meter for Parameter Measurement.

HUMIDITY SENSOR:

A Humidity Sensor shall be provided to measure the humidity inside the gas chamber.

VACUUM PUMP:

A double Stage Rotary Vacuum Pump having pumping capacity of 15 M³/hr or better is Provided for evacuation of the Process Chamber and Dynamic Gas Sensing. This Pump is isolated from Process chamber through Isolation Valve.



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PIRANI GAUGE (VACUUM MEASUREMENT) :

A Digital Pirani Gauge with one heads which reads the vacuum level in the range of atm to 1×10^{-3} m. bar provided for Vacuum Measurement.

VACUUM PLUMBING LINES CONSISTS OF:

- 1) 1" Stainless Steel flexible bellow / Silicon Tube to connect Chamber & Vacuum Pump.
- 2) 1" manually operated butterfly type isolation valve to isolate the Chamber.
- 3) 1 No. Manually operated vent valve to vent the chamber.
- 4) 1 No. Gas Valve to control Flow of MFC to Purge Gas into Test Chamber and Vac. line.
- 5) Set of Electrical Control, Cables & necessary connectors

VOC & GAS DELIVERY SYSTEM: Gas Delivery System has two inlet mechanisms VOC and Gas flow.

a. VOC FLOW SYSTEM:

The setup has Bubbler of 50 to 80ml volume containing chemicals in liquid form (VOC) with encapsulated heater. The vapors of these chemicals shall get introduced into the chamber through MFC flow. One of the MFCs from Set of MFCs will be used for VOC Purging into the Chamber.

b. GAS FLOW SYSTEM: MASS FLOW CONTROLLERS: (3 Nos.) – USER Provided

1 No. Multi Gas MFC for **Carrier Gas (Nitrogen or Dry Air, Flow Rate: 5SLPM)** and 1 No. MFC for **Non-Corrosive** (Flow rate: 500 SCCM) for Gases Like, CO, CO₂, H₂, CH₄, O₂, N₂, O₂. Argon etc and 1 No. MFC for **Non-Corrosive Sample** (Flow rate: 10 SCCM). Combination of MFCs will be selected in such a way that Sample Gas concentration can vary upto 10 PPM Level. MFCs will be integrated into system and Interfaced with Gas mixing Software controlled by Computer. These MFCs are Programmable from Front Panel or through Computer.

TECHNICAL SPECIFICATIONS OF MASS FLOW CONTROLLER:

Flow Range: Selected in such a way that Sample Gas concentration can vary upto PPM Level.

Medium: Ar, N₂, H₂, O₂, CO, CO₂, etc. (Single MFC can be used for upto 30 Gases)

Maximum Inlet Pressure: 9.9 bar

Operating Range: 0.5% to 100% Full scale measurement

Accuracy: ± (0.8% of reading + 0.2 % of full scale)

Repeatability: ± 0.2% Full scale

Typical response time: 100 Milliseconds (Adjustable) or less

Warm up Time: less than 1 second

Resolution: 0.01% of F.S

Operating temperature: -10°Celsius to +50°Celsius

Humidity Range: 0 to 100% Non-Condensing

Input/output Signal Analog Mass Flow 0-5 Vdc/0-5 Vdc



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Input /Output Signal Digital Display: Mass Flow Rate, Volumetric Flow, Pressure & Temperature

System connector: RS-232 Serial

Power Supply: 100-240 VAC to 24 VDC Power Supply

Fittings: Swage Lock Compression Type

Mounting: MFCs will be mounted on a control panel along with their Power supplies with suitable connectors.

MFC offered will be pre-calibrated for the following gases and gas mixtures

Acetylene, Air, Argon, iso-Butane, normal-Butane, Carbon Dioxide, Carbon Monoxide, Ethane, Ethylene, Helium, Hydrogen, Krypton, Methane, Neon, Nitrogen, Nitrous Oxide, Oxygen, Propane, Sulfur Hexafluoride, Xenon.

Important Requirements:

- Calibration Certificate will be provided with Mass Flow Controllers by USER.

MASS FLOW CONTROLLER GAS MIXING & FLOW VISION SOFTWARE:

Gas Mixing & Flow Vision Software Model FlowVisonMX / FlowVisionSC will be required for Gas Sensing Set up. Mixing Software will be Loaded in Computer/Laptop.

GAS MANIFOLD:

A Gas Manifold for purging 3 Gases and VOC is connected to Chamber with NRVs, Swagelock Type Manual Connectors to connect with Cylinders through Regulators.

COMPUTER OR LAPTOP:

Processor, i5, Gen10, 8 GB RAMS, 250 SSD or 1Tb H/D, and 15 Inch Display or better with **Gas Mixing & Flow Vision Software will be provided.**

TEKTRONIX MAKE SOURCE METER MODEL SMU 2450 UPGRADABLE TO ADD 11 CHANNEL MULTIPLEXERS IN FUTURE

Upgraded Version of Source Measure Unit Model SMU 2450 with Provision to add Switch with High Performance for Sequential Readings of 11 Contacts in future. (**Optional**)

Upgraded Version of Source Measure Unit Model SMU 2450 with Provision to add DUAL 1X20 MULTIPLEX CARD (AUTO CJC WITH 3721-ST) (**Optional**)

Tektronix- 50 PIN FEMALE TO MALE D-SUB CABLE ASSY: 3M as part of this system

Software to interface the Unit with PC is at additional Cost

Detailed Specifications of SMU 2450 are given below

S. No	Features	Specification
1*	Voltage Source and measure ranges	20mV to 200V
2*	Voltage resolution	Measure : 10 nV Source: 500nV.
3	Current Source and measure range	10nA to 1A



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4*	Current resolution	Measure : 10 fA Source: 500 fA.
5	Voltage Accuracy	0.100% + 150 μV @ 20 mV 0.015% + 10 mV @200V
6	Current accuracy	0.10% + 50 pA @ 10 nA 0.030% + 500 μ A @ 1 A
7	Sweep types	Linear, log, Dual Linear, Dual Log, Custom, Source Memory mode
8*	Internal buffer	250000 point breading buffer
9	Programming interfaces supported	USB, GPIB, Ethernet (LXI), TSP
10*	Expansion Interface for Multichannel operation	TSP link –used for Trigger and communication with each other supporting Master Slave mode
11*	Signal supported connectors	Front Panel Banana Jacks/ rear panel 3 lug Triax
12	Measurement speed	3000 readings / sec
13	Measurement Display Resolution	User selectable 3 ½ to 6 ½
14	Measurement mode	Voltage , current, Resistance, power
15	Display and control	5 inch Built-in capacitive Touch screen display. Icon based control to setup measurement , source and graph display
16	Storage of setups and export measurement data	Through front panel USB pen drive slot
17	Digital I/O interface	9 –Pin Female D connector 6 I / O user programmable

AUTOMATION:

A Desktop with Automation Software to control MFCs, Source Meter etc. will be provided alongwith system to control Gas Flow and record IV characteristics etc.

PROGRAMMING INTERFACES SUPPORTED: USB, RS232, Ethernet or GPIB or TSP.

GAS CYLINDERS & REGULATORS: (USER SCOPE)

Standard Size Cylinders with following Specifications

- 100 PPM Concentration Sample Gases (Sample Gases),10 Ltrs water capacity with Double Stage SS Regulator (**Qty & Gas Type As per User requirements**)
- N2 (47) Ltrs water capacity with Double Stage SS Regulator for Carrier Gas

GAS LINE WITH GAS PURIFIER FOR CYLINDERS: (USER SCOPE)



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Gas Line with Gas Purifier (Moisture Trap) will be laid down to connect 4 Cylinders. A Manifold with 1/4" Valves will be provided to connect 2-3 Nos. Sample Gas Cylinders with Common MFC and 1 No. Direct line will be provided from Cylinder to Carrier Gas MFC.

UTILITIES: (TO BE PROVIDED BY THE USER)

POWER : The Unit is wired to operate on 240 V AC, Single phase , 50 Hz

GASES : Standard Size Cylinders with Double Stage SS Regulator

SAMPLES : User has to provide sample in Pallet or Thin Film Slide or Thin Film Coated Wafer with Gold or Silver Contacts for Resistivity Measurement using 2-Probe or 4-Probe Measurement for demonstration purpose. Set up can't be used for Samples in Powder Form.

We look forward for your valuable order.

Thanking you & assuring of our best services at all times.

For **SCIENTIFIC & ANALYTICAL INSTRUMENTS**

RAJUDDIN
(AUTHORISED SIGNATORY)





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PROPRIETARY CERTIFICATE:

Dear Sir/Madam,

We hereby confirm that **Programmable Atmospheric-Controlled Sensing Devices (PAC-SD) Test bed** quoted vide our Quotation no. **SAI/IIITA/ENQ-26019R1/26-27** is manufactured by SCIENTIFIC & ANALYTICAL INSTRUMENTS and it is a Propriety Item of our company. To the best of our knowledge, Scientific & Analytical Instruments is the only OEM of this Gas Sensing System in India.

If you have any queries what so ever with regards to this system or functionality, Pls. feel free to contact us at: sainanotech@gmail.com or saisales74@gmail.com and Mobile no. **09650866152** or **9718525863**.

Thanking you & assuring of our best services at all times.

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