AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

1. CONTRACT ID CODE	PAGE	OF PAGES
	1	13

2. AMENDMENT/MODIFICATION NUMBER	3. EFFECTIVE DATE	4. REQUISITION/PURCHASE REQUISITION NUMBER	5. PROJECT NUMBER *(If applicable)*
1333ND26QNB0304500001	AUG 11, 2026	NB305000-26-00170	

6. ISSUED BY CODE 000SB
NATIONAL INST OF STDS AND TECHNOLOGY
100 BUREAU DRIVE STOP 1640
BUILDING 301 ROOM B129
GAITHERSBURG MD 20899-1640

7. ADMINISTERED BY *(If other than Item 6)* CODE
See Block 6

8. NAME AND ADDRESS OF CONTRACTOR *(Number, street, county, State and ZIP Code)*

CODE FACILITY CODE

(X)

[X] 9A. AMENDMENT OF SOLICITATION NUMBER
1333ND26QNB030450

9B. DATED *(SEE ITEM 11)*
AUG 04, 2026

[ ] 10A. MODIFICATION OF CONTRACT/ORDER NUMBER

10B. DATED *(SEE ITEM 13)*

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

[X] The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers [ ] is extended. [X] is not extended.
Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods:
(a) By completing items 8 and 15, and returning 1 copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or electronic communication which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by letter or electronic communication, provided each letter or electronic communication makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA *(If required)*
See Schedule

13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NUMBER AS DESCRIBED IN ITEM 14.

CHECK ONE	
[ ]	A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: *(Specify authority)* THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NUMBER IN ITEM 10A.
[ ]	B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES *(such as changes in paying office, appropriation data, etc.)* SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).
[ ]	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:
[ ]	D. OTHER *(Specify type of modification and authority)*

E. IMPORTANT: Contractor [ ] is not [ ] is required to sign this document and return _____ copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION (*Organized by UCF section headings, including solicitation/contract subject matter where feasible.)*

This Solicitation is hereby amended to provide responses to questions received. As a result the SF-1449 attachment and Statement of Work (SOW) are hereby revised. All other terms and conditions remain the same.

Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER *(Type or print)*		16A. NAME AND TITLE OF CONTRACTING OFFICER *(Type or print)*	
15B. CONTRACTOR/OFFEROR	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA	16C. DATE SIGNED
(Signature of person authorized to sign)		*(Signature of Contracting Officer)*	

Amendment 0001

Question 1: Pricing structure: The SF-1449 schedule shows “NTE” under Unit Price and Amount for CLIN 0001, while the solicitation states a firm-fixed-price purchase order is anticipated. Please confirm offerors are to enter a firm-fixed unit price for CLIN 0001 and clarify whether CLIN 0002 (FOB Destination Shipping) is to be priced separately or included within CLIN 0001.

Response to Question 1: The Government intends to award a firm-fixed price purchase order. Offerors shall provide a firm-fixed unit price for CLIN 0001. The "NTE" notation applies only to CLIN 0002 (FOB Destination Shipping), which shall be quoted separately in accordance with the SF-1449.

Question 2: Delivery timeframe: The SF-1449 attachment references delivery within five (5) months ARO, while the SOW Schedule of Deliverables states “no later than 18 weeks ARO.” Please confirm which delivery deadline governs.

Response to Question 2: The estimated delivery is no later than 18 weeks ARO. The SF-1449 attachment is hereby revised to reflect delivery within 18 weeks ARO.

Question 3: Installation and startup: The Payment Schedule references “installation and acceptance … of fully installed system.” For this portable, self-contained benchtop instrument, please confirm whether on-site installation, startup/commissioning, and/or operator training by the contractor (or the manufacturer’s field service engineer) is required, or whether delivery of the instrument in operable condition satisfies “installation.”

Response to Question 3: Delivery of the instrument in operable condition satisfies the installation requirement. No on-site installation, startup/commissioning, operator training, or other on-site services are required from the Contractor. NIST personnel will integrate the instrument with the applicable apparatus and perform subsequent testing. The Payment Schedule has been revised accordingly.

Question 4: Acceptance and demonstration: Please clarify whether the on-site performance demonstration and leak-rate acceptance testing will be conducted by NIST personnel, or whether the contractor must perform or support this testing on-site and be present.

Response to Question 4: The Contractor is not required to perform or support on-site performance demonstration or acceptance testing, nor is the Contractor required to be present. On-site performance demonstration and acceptance testing will be conducted by NIST personnel.

Question 5: Calibrated leak (Spec p): Please specify the required calibrated leak — type

(internal/permeation vs. external), required or preferred leak-rate value or range, and whether a calibration certificate traceable to national standards and a stated recalibration interval are required.

Response to Question 5: The Government requires an internal calibrated leak comparable to the Pfeiffer Adixen Calibrated Leak 3G.2 (50 cc), Part No. 2000047492 / 121528S, or equal.

Question 6: Helium-3 detection (Spec c): Please confirm that Helium-3 (mass 3) detection is a mandatory requirement in addition to Helium-4 and molecular hydrogen, as this materially affects model selection.

Response to Question 6: Yes. Detection of Helium-3 is a mandatory requirement. The required detection capabilities include mass 2 (molecular hydrogen), mass 3 (Helium-3), and mass 4 (Helium-4).

Question 7: Power and connections: Please confirm that a standard U.S. 120 V / 60 Hz single-phase supply with a NEMA 5-15 plug is acceptable, and that the DN 25 ISO-KF inlet is the sole required inlet interface.

Response to Question 7: Yes. A standard U.S. 120 V / 60 Hz single-phase power supply with a NEMA 5-15 plug is acceptable. Additionally, the DN 25 ISO-KF inlet is the required inlet interface.

Question 8: Cybersecurity / SPII (SOW Section VIII): Please confirm whether the cybersecurity and privacy (SPII) controls and system security plan requirements apply to this standalone hardware instrument, which does not store or transmit SPII or connect to NIST networks. If applicable, please clarify what response is expected in the quote.

Response to Question 8: Offerors should indicate that the proposed system is a standalone instrument with no interaction with NIST networks and, therefore, meets the applicable requirements.

Question 9: Delivery point details: Block 15 and the SOW list “Attention: TBD at time of Award.” For accurate freight pricing, please confirm delivery point details — loading dock vs. inside/lab delivery, any liftgate requirement, and any facility access or appointment requirements at Building 301.

Response to Question 9: The contractor shall deliver all Line Items to:
National Institute of Standards and Technology
Shipping and Receiving
100 Bureau Drive, Building 301

Amendment 0001

Gaithersburg, MD 20899
Attention: TBD (Bldg. 221/A320)

Question 10: Warranty and service options: Please confirm whether extended warranty or preventive-maintenance/service-plan pricing should be offered as separately priced options or omitted, and whether warranty service is expected to be on-site or return-to-depot.

Response to Question 10: Offerors are not required to provide separately priced extended warranty or preventive maintenance/service plan options. The Government requires only the standard manufacturer's warranty customarily provided with the proposed instrument. Warranty service may be provided in accordance with the manufacturer's standard commercial warranty terms.

Question 11: Set-aside eligibility (nonmanufacturer rule): As this is a 100% small business set-aside under NAICS 334516 for a manufactured end item, please confirm whether the nonmanufacturer rule applies, and whether an SBA class waiver exists for this item — or whether the offeror must furnish the product of a small business manufacturer.

Response to Question 11: Pursuant to 13 CFR 121.406(c), the nonmanufacturer rule does not apply to small business set-aside acquisitions with an estimated value greater than the micro-purchase threshold and not exceeding the simplified acquisition threshold. Accordingly, the nonmanufacturer rule does not apply to this acquisition.

Table of Contents

RFQ_1333ND26QNB030450_Amended..... 6
Attachment A - Statement of Work (SOW)_Amended.....7

This solicitation is for commercial products or commercial services and is issued in accordance with RFO Part 12, *Acquisition of Commercial Products and Commercial Services*, as supplemented by Department of Commerce acquisition policies. The solicitation document and incorporated provisions and clauses are those in effect under the Revolutionary FAR Overhaul (RFO), as supplemented by Department of Commerce acquisition policy.

This procurement is being issued as a 100% small business set-aside.

The associated North American Industry Classification System (NAICS) code for this procurement is 334516 — Analytical Laboratory Instrument Manufacturing with a small business size standard of 1,000 Employees.

It is anticipated that a Firm-Fixed Price type Purchase Order will be issued as a result of this solicitation.

Delivery shall be FOB Destination and made within ~~five (5) months~~18 weeks or less after receipt of order (ARO).

Offerors shall submit pricing for the line item(s) on the Standard Form 1449 in accordance with Attachment A, Statement of Work (SOW).

Attachments:
Attachment A – Statement of Work (SOW)
Attachment B – Clauses, Instructions to Offerors, and Evaluation Criteria

STATEMENT OF WORK
Title: Helium leak detector

I. BACKGROUND INFORMATION

The National Institute of Standards and Technology (NIST), an agency within the U.S. Department of Commerce, advances U.S. innovation and industrial competitiveness by developing and promoting measurement science, standards, and technology. Within NIST, the Material Measurement Laboratory (MML) develops measurement science, standards, reference materials, and data that enable innovation in advanced materials, manufacturing, biotechnology, and emerging technologies. MML supports U.S. industry by providing the measurement capabilities necessary to improve product quality, accelerate technology development, and strengthen domestic manufacturing competitiveness.

As part of this mission, MML conducts research that supports the advancement of semiconductor manufacturing technologies. The semiconductor supply chain is global, highly specialized, and deeply interconnected, with manufacturers relying on thousands of suppliers to provide the advanced materials, equipment, and process technologies required to fabricate semiconductor devices. Limited visibility into semiconductor supply chains and research and development ecosystem gaps has highlighted the need for improved measurement capabilities that enable the development, validation, and optimization of next-generation semiconductor manufacturing processes. To address these challenges, NIST develops the measurement science (metrology) needed to support advances in semiconductor materials, packaging technologies, and production methods.

The Digital Twins for Atomic Layer Deposition Processes Project (Project 5.05) was established to develop and validate digital twin models for atomic layer deposition (ALD) processes, enabling more efficient process design, optimization, and operation. A critical component of this effort involves the design, assembly, integration, and testing of high-vacuum optical cells and ALD chambers used to support experimental validation of the digital twin models.

Verification of these vacuum systems requires precise leak testing using a helium leak detector (HLD). To support laboratory operations, the HLD must be sufficiently compact and portable to allow use at multiple testing locations, including optical tables and laboratories in different buildings. The instrument must also provide exceptionally high leak detection sensitivity to identify extremely small leaks that could adversely affect vacuum performance. In addition, the HLD shall utilize oil-free pumping technology to eliminate the risk of hydrocarbon contamination that could compromise sensitive vacuum systems, experimental integrity, or semiconductor processing equipment.

Purpose/Objective: The purpose of this acquisition is to procure a compact, high-sensitivity, oil-free helium leak detector (HLD) to support the CHIPS Digital Twins for Atomic Layer Deposition (ALD) Processes Project. Digital twin models are a critical tool for advancing semiconductor manufacturing but require high-quality experimental data for validation. This data will be generated using custom optical cells and ALD deposition chambers that operate under

high-vacuum conditions. Verifying the vacuum integrity of these systems through helium leak testing is essential to ensure proper operation and produce accurate, reliable measurement data. Because multiple vacuum systems are currently being assembled and an HLD is not available, procurement of this equipment is necessary to commission the experimental apparatus, begin data collection, and meet project milestones within the required schedule.

II. MINIMUM REQUIREMENTS

The Contractor shall provide a system that meets all technical specifications identified below. All items must be new. Used or remanufactured equipment will not be considered for award. Experimental, prototype, or custom items will not be considered. The use of "gray market" components are not acceptable. All line items shall be shipped in the original manufacturer's packaging and include all original documentation and software, when applicable.

Line Item 0001
Description: A portable, self-contained, oil-free helium leak detector (HLD)
Quantity: One (1)

A. Technical Specifications

a. Minimum detectable helium leak rate: 5 x 10^{-12} Pa·m^3/s or lower
b. Minimum peak pumping speed for helium: 1 liter/second or higher
c. Detectable gases: Helium-3, Helium-4, and molecular hydrogen
d. Auto-calibrating for leak rate upon start-up
e. Maximum time for start up (including calibration): 5 minutes or less
f. Oil-free backing pump integrated into package
g. Minimum pumping speed for backing pump: 1.5 m^3/h or higher
h. Inlet connection flange: DN 25 ISO-KF
i. Power: single phase, 105-125 V, 50/60 Hz
j. Weight not to exceed 50 lbs (22.7 kg) including backing pump
k. Inlet port for a nitrogen purge
l. Touchscreen menu for control
m. Supplied with a remote or removable touchscreen
n. Supplied with a helium spray gun for delivery of helium to the test vacuum chamber
o. Supplied with a cart or trolley for transportation
p. Supplied with a calibrated leak

III. SCHEDULE OF DELIVERABLES

Deliverable Number	*Description*	*Quantity*	*Due Date*	*Place of Delivery*
1	Helium leak detector	One (1)	No later than 18 weeks ARO	NIST (Gaithersburg)

IV. DELIVERY TERMS

Delivery shall be F.O.B Destination (or equivalent incoterms, such as DDP) and shall occur in accordance with the delivery due dates provided in the table above.

FOB Destination means: The contractor shall pack and mark the shipment in conformance with carrier requirements, deliver the shipment in good order and condition to the point of delivery specified in the purchase order, be responsible for any loss of and/or damage to the goods occurring before receipt and acceptance of the shipment by the consignee at the delivery point specified in the purchase order; and pay all charges to the specified point of delivery.

The contractor shall deliver all Line Items to:
National Institute of Standards and Technology
Shipping and Receiving
100 Bureau Drive, Building 301
Gaithersburg, MD 20899
Attention: TBD at time of Award (Bldg. 221/A320).

Formatted: Font: 11 pt

Formatted: Space After: 8 pt

V. INSPECTION & ACCEPTANCE

In addition to the inspection and acceptance provisions of the applicable FAR clause, the Government reserves the right to perform the performance tests and evaluations described below to verify that the system meets the requirements of this solicitation. Any such tests and evaluations will be conducted by NIST personnel in the environment in which the instrument will be operated. The Contractor is not required to perform or support these tests or to be present during testing.

Performance Testing

1. Performance testing may include measuring the minimum detectable leak rate of the helium leak detector using calibrated leak rate standards.

NIST may, at its sole discretion, waive all or part of the performance testing described above. Upon delivery, the NIST Point of Contact (POC) will perform a visual inspection of the instrument to identify any visible defects or evidence of damage incurred during shipment. The Government reserves the right to reject any supplies that are damaged or otherwise fail to conform to the contract requirements. Any required repair or replacement of damaged or nonconforming supplies shall be provided at no additional cost to the Government.

The Contractor remains responsible for latent defects discovered after acceptance in accordance with the terms and conditions of the contract.

Ownership of the equipment shall be transferred to NIST upon acceptance by the Government.

The Government will inspect, test, and accept or reject the equipment within ten (10) business days after receipt, unless otherwise specified herein. The Government reserves the right to conduct quality assurance testing to verify that the instrument meets the manufacturer's published performance specifications and the performance requirements of this solicitation.

~~In addition to the inspection and acceptance terms articulated in the specific FAR clause that allows the Government reserves the right to perform such performance tests and evaluations as defined below to verify specified system performance. Such tests and evaluations, if performed, shall be conducted within the environment that the system is to be operated. The Contractor has the right to be present during the tests and evaluations, if performed, at the Contractor's expense.~~

~~Performance Tests:~~
~~1. Performance tests involve measuring minimum detectable leak rate of the HLD with calibrated leak rate valves.~~

~~**NIST may choose at its discretion to forego this part of acceptance testing.**~~
~~A visual inspection of the equipment will be performed by the NIST POC to identify surface defects or any form of indication that any equipment was damaged during transport to NIST. The Government shall have sole discretion to require repair or replacement of damaged and/or nonconforming supplies at no cost to the Government. The Government at any time prior to acceptance shall reject the equipment due to defects and/or nonconformance. The vendor is responsible for latent defects discovered any time after final inspection. However, the extent of its liability shall be prorated over the useful life of the equipment.~~

~~Ownership of the equipment shall transfer to NIST upon acceptance by the Government.~~

~~The Government will test, inspect, and accept or reject the equipment within ten (10) business days of the receipt of the equipment unless otherwise indicated above. The Government reserves the right to conduct quality assurance testing to confirm that a given instrument(s) meets the manufacturer's and/or the Government's performance specifications. It is anticipated that the equipment will meet all manufacturer's specifications and/or the Government's performance specifications identified in the most recent operations and maintenance manual for each piece of equipment and/or in this document.~~

VI. WARRANTY

The contractor shall warrant the entire system for a period of a minimum of twelve (12) months. Warranty shall commence upon acceptance of the system by the Government and at a minimum shall include parts and labor.

VII. PAYMENT SCHEDULE

The Contractor will be paid in accordance with the applicable contract payment clause. Payment will be made upon completion of all the following:

1. Delivery of the instrument in operable condition and acceptance by the COR;
2. Successful completion of the testing requirements set forth in this document;
3. Successful demonstration that the instrument performs in accordance with all requirements set forth in this document; and
4. Submission of a proper invoice.

For purposes of this payment schedule, delivery of the instrument in operable condition satisfies the installation requirement. No on-site installation, startup, commissioning, or operator training by the Contractor is required.
~~The Contractor will be paid, in accordance with the payments clause in the contract and as follows:~~

> ~~1. 100% after installation and acceptance by the POC of fully installed system,~~
> ~~2. After the successful completion of the testing requirements set forth in this document,~~
> ~~3. After successful demonstration by the instrumentation that it performs in accordance with the requirements set forth in this document, and\~~
> ~~4. Upon submission of a proper invoice.~~

NOTE: Partial shipments and partial invoices will not be accepted, unless otherwise requested and accepted by the Contracting Officer prior to award offer. Proposed payment schedules shall be submitted with vendor's response to the RFQ for consideration.

All invoices submitted after 10/01/2026 shall be submitted via ipp.gov in accordance with NIST LOCAL-56.

VIII. CYBERSECURITY PRIVACY REQUIREMENTS

NIST seeks a solution that provides security and privacy protection consistent with requirements defined by applicable federal laws, regulations, policies, and standards (e.g., the Federal Information Security Management Act (FISMA), OMB Circular A-130, and FIPS Publication 200). The solution provider (including subcontractors) may meet these requirements through various means, including but not limited to FedRAMP authorization, current third-party assessments (e.g., SSAE, PCI), and/or responses to NIST special publication control set SP 800-171.

Minimally Acceptable Controls

- System security plan describing physical, technical, and administrative controls implemented to protect systems and sensitive personally identifiable information (SPII).
- IT management processes to establish and manage secure configuration baselines including routine patching for all operating systems and applications.
- Access to SPII is restricted to those with a need to know. Personnel with access to SPII have background investigations performed (e.g. criminal, financial etc.), and are trained on secure handling of SPII.
- Access Controls for SPII meet or exceed industry best practices for access and identification control including, but not limited to, connectivity to servers and databases, multi-factor authentication for remote accesses for administration, secure configurations for any devices accessing the system, and strong physical security for any place where the data is accessed.

- The solution supports multifactor authentication for users and/or supports integration with customer federation services for Single-Sign capability.
- Processes for scanning on a continual basis for vulnerabilities and proper configurations for all aspects of the system, as well as processes for timely mitigation of findings.
- Auditing and Incident Response processes including customer notification of suspected or actual incidents and logging with sufficient information to perform forensics on any incident. Processes for notifying and providing appropriate mitigations, including but not limited to credit monitoring services, for subsidy applicants in the event of suspected or actual incidents.
- SPII is encrypted in transit using TLS 1.2 or better and encrypted at rest in all places the SPII is stored. All encryption algorithms and modules are FIPS 140-2/140-3 validated.

If unable to meet any of the requirements listed above, the solution provider may provide details of mitigations or alternative protections in place to ensure the appropriate handling and protection of SPII.

If the solution provider provides services to other Federal agencies, provide a general description of the security risk management approach and client point of contact.