



INVITATION TO BID

ITB Number: **B208772908CH**
ITB Title: **B208772908CH Automated Particle Size, Morphology Ramen, and Chemical Identification Tool.**
Submittal Email: bids@oregonstate.edu

INTRODUCTION

Procurement, Contracts and Materials Management is seeking responsive responsible bidders to submit bids for an automated particle morphology analyzer that uses ramen spectroscopy for chemical identification. The system shall be able to separate chemical phases of a blended cement system to provide particle size distributions for both the complete system and the chemically separate phases independently. This should be able to be done rapidly with an automated and trainable software approach. This will enable the user to perform automated image analysis of ground cement clinker, cement powder, supplementary cement, admixtures and cement making particles and the ability to characterize these particles both morphologically and chemically.

SCHEDULE OF EVENTS

Issue Date: November 10, 2025 (4:00 pm, PT)
Question Deadline: November 14, 2025 (4:00 pm, PT)
Closing: November 21, 2025 (4:00 pm, PT)

OSU ADMINISTRATIVE CONTACT

Name: Cassandra Hurd
Title: Purchasing Analyst
E-Mail: Cassandra.hurd@oregonstate.edu

Procurement, Contracts and Materials Management (PCMM) at Oregon State University (OSU) is the issuing office and is the sole point of contact for this Invitation to Bid (ITB). Address all concerns or questions regarding this ITB to the OSU Administrative Contact identified above.

I. GENERAL

1. BACKGROUND:

The Oregon State University (OSU) College of Engineering supports a wide range of research and instructional activities in materials science, civil engineering, and construction innovation. As part of its mission to advance sustainable infrastructure and materials research, the department requires advanced analytical tools to characterize cementitious materials at a granular level.

The department is seeking to procure a system capable of automated image analysis of ground cement clinker, cement powder, supplementary cementitious materials, admixtures, and other cement-making particles. This system must enable both morphological and chemical characterization of individual particles using Raman spectroscopy. The ability to distinguish and analyze individual particle types—rather than relying solely on bulk measurements—will significantly enhance the department's ability to study and optimize blended cement systems.

Historically, the department has relied on light and laser-based particle size analysis and X-ray fluorescence for chemical composition. While these methods provide valuable insights, they are limited in their ability to differentiate between particle types within complex mixtures. This limitation has posed challenges in accurately characterizing the performance of blended cements, particularly in understanding the role of individual components and their interactions.

The proposed system will address these challenges by enabling rapid, automated identification of particle families, providing detailed particle size distributions for each phase, and offering insights into trace chemical compositions, such as those from grinding aids. This capability will support the development of more sustainable and high-performance cement formulations.

2. OREGON STATE UNIVERSITY:

Founded in 1868 as Oregon's land grant institution, OSU serves the state, the nation, and the world as a premier 21st-century research university. OSU is committed to exceptional research, discovery, innovation, and engagement – and to integrating its research and engagement mission with the delivery of a high-quality, globally relevant, and affordable education for the people of Oregon and beyond. OSU is one of only three land, sea, space and sun grant universities in the U.S. and is the only university in Oregon to have earned both Carnegie Classifications for Very High Research Activity and Community Engagement.

Through its centers, institutes, Extension offices and Experiment Stations, OSU has a presence in all of Oregon's 36 counties, including its main campus in Corvallis, the Hatfield Marine Sciences Center in Newport and OSU-Cascades Campus in Bend. OSU

offers undergraduate, master's and doctoral degrees through 11 academic colleges enrolling more than 35,000 students from every county in Oregon, every state in the country and more than 105 nations.

OSU's 570-acre main campus is in the city of Corvallis, a vibrant college town of nearly 58,000 in the heart of Western Oregon's Willamette Valley. The campus is located within the traditional homelands of the Mary's River or Ampinefu Band of Kalapuya. Following the Willamette Valley Treaty of 1855 (Kalapuya etc. Treaty), Kalapuya people were forcibly removed to reservations in Western Oregon. Today, living descendants of these people are a part of the Confederated Tribes of Grand Ronde Community of Oregon and the Confederated Tribes of the Siletz Indians.

3. TERMS AND CONDITIONS:

Contracts resulting from this ITB are subject to the applicable [OSU standard terms and conditions](#), unless otherwise specified.

4. APPLICABLE REGULATIONS / JURISDICTION AND VENUE:

This ITB is subject to the applicable provisions and requirements of the Oregon Revised Statutes, Oregon Administrative Rules, and OSU Standards and Policies. OSU Standards 03-010 and 03-015 govern OSU's procurement activities. In case of confusion or dispute of a word or term used in this ITB, the definitions included in OSU Standards 03-010 and 03-015 control.

This ITB, and any dispute arising out of this ITB, shall be construed in accordance with, and governed by, the laws of the State of Oregon. Any other action to enforce any provision of this ITB or to obtain any relief from or remedy in connection with this ITB may be brought only in the Circuit Court of Oregon for Benton County.

II. INSTRUCTIONS TO BIDDERS

1. COMMUNICATIONS DURING BID PROCESS:

Bidders are prohibited from communicating about this ITB or award of a new contract with OSU employees, other than the OSU Administrative Contact, or any party in a position to create an advantage for the bidder or disadvantage for other bidders. This restricted period of communication begins on the date the ITB is issued and ends with the conclusion of the appeal period following notice of intent to award. This restriction does not apply to communications during a pre-bid conference or other situations where the OSU Administrative Contact is present. A bidder who intentionally violates this requirement or otherwise benefits from such a violation by another party may have its bid rejected due to failing to comply with all prescribed solicitation procedures.

2. QUESTIONS:

Questions about this ITB must be sent via email and received by the OSU Administrative Contact no later than the question deadline indicated in the Schedule of Events on the first page of this ITB. OSU will consider all timely submitted questions and if appropriate either amend the ITB or answer questions through an addendum. Questions should be clearly marked with the ITB Number and Title.

3. ADDENDA:

Only documents issued as written addenda by PCMM serve to change the ITB in any way. No other direction, written or verbal, serves to change the ITB. Addenda will be publicized on the OSU bid opportunities website. Bidders are advised to consult the OSU bid opportunities website prior to submitting a bid to ensure that all relevant addenda have been incorporated into their bid. Bidders are not required to submit addenda with their bid however, bidders are responsible for obtaining and incorporating any changes made by addenda into their bid. Failure to do so may make the bid non-responsive, which in turn may cause the bid to be rejected.

4. SIGNATURE:

Any submittals that require signature must be signed, in ink or electronically, by an authorized representative with authority to bind the bidder. Bidder's signature certifies that the bidder has read, fully understands, and agrees to be bound by the ITB and all exhibits and addenda to the ITB.

5. PUBLIC RECORD:

Upon completion of the ITB process, information in all bids will become subject records that can be disclosed under Oregon Public Records Law. Oregon Revised Statute 192.345 contains exemptions from disclosure including "trade secrets", which may include, but are not limited to: any formula, plan, pattern, process, tool, mechanism, compound, procedure, production data, or compilation of information which is not patented, which is known only to certain individuals within an organization and which is used in a business it conducts, having actual or potential commercial value, and which

gives its user an opportunity to obtain a business advantage over competitors who do not know or use it. NOTE: Price is NOT a trade secret.

If a bid contains "trade secrets" the bidder must only mark those sections of the bid with the words "TRADE SECRET" prior to, and at the end of, the trade secret information; *provided*, that such mark shall not be sufficient to make any information a "trade secret.". Only bona fide "trade secrets" may be exempt and only if public interest does not require disclosure. Marks or claims that the entirety of a bid is "trade secret" or "confidential" WILL RESULT IN NONE OF THE BID BEING TREATED AS SUCH.

6. SUBMISSION:

Bidders must submit their bid as attachment(s) in an e-mail sent to the bids@oregonstate.edu email address. Electronic versions must be sized appropriately for transfer (under 150 mb per email.) Multiple emails may be sent to submit bid attachments as necessary. Bids must be received, in their entirety, by PCMM no later than the closing date and time indicated in the Schedule of Events on the first page of this ITB. The e-mail subject line must contain the ITB number and ITB title. It is the bidder's responsibility to ensure that the bid is received prior to the closing date and time. Only those bids received at the bids@oregonstate.edu email address by the closing date and time will be considered responsive. Do not e-mail a copy of the bid to any other OSU e-mail addresses.

It is highly recommended that the bidder confirms receipt of the email with the OSU Administrative Contact noted in this ITB. The OSU Administrative Contact may verify receipt but will NOT verify the integrity of the attachment(s), answer questions related to the content of the bid or address the overall responsiveness of the bid.

7. MODIFICATION:

Modification of a bid after submittal but prior to closing may be completed by submitting a written notice indicating the modifications and a statement that the modification amends and supersedes the prior bid. After closing, bidders may not modify their bid.

8. WITHDRAWALS:

A bidder may withdraw their bid by submitting a written notice to the OSU Administrative Contact prior to the closing date and time. The written notice must be on the bidder's letterhead and signed by an authorized representative of the bidder.

9. LATE SUBMITTALS:

Bids and written notices of modification or withdrawal must be received no later than the closing date and time. For purposes of this ITB, the official date and time is the date and time that the email is received at the bids@oregonstate.edu email address. OSU may not accept or consider late bids, modifications, or withdrawals except as permitted in OSU Standard 03-015, Sec 5.9. Sole responsibility rests with the bidder to ensure OSU's

receipt of its bid prior to closing. OSU shall not be responsible for any delays or misdeliveries caused by transmission errors, malfunctions, or electronic delays including those within OSU's network. IT IS THE BIDDER'S RESPONSIBILITY TO ENSURE OSU HAS RECEIVED THE BID BY CLOSING DAY AND TIME. Any risks associated with electronic transmission of the bid are borne by the bidder.

10. BID OPENING:

Bids will be opened immediately following the closing. Bidders may request to attend a virtual bid opening which may be conducted via Zoom or other electronic meeting platform. Please inform the OSU Administrative Contact in advance if you would like to attend the bid opening. Only the names of the bidders submitting bids will be announced. No other information regarding the content of the bids will be available.

11. BIDS ARE OFFERS:

The bid is the bidder's offer to enter a contract pursuant to the terms and conditions specified in the ITB, its exhibits, and addenda. The offer is binding on the bidder for one hundred twenty (120) days. OSU's award of a contract constitutes acceptance of the offer and binds the bidder.

12. RIGHT TO REJECT:

OSU may reject, in whole or in part, any bid not in compliance with the ITB, exhibits, or addenda. OSU may reject all bids for good cause, if OSU finds that it is in the public interest to do so. Notification of rejection along with appeal rights will be sent to bidders whose bid is rejected.

13. BID CANCELLATION:

If an ITB is cancelled prior to closing, notification of cancellation will be sent, and all bids already received will be deleted. If an ITB is cancelled after closing, or all bids are rejected, the bids received will be retained and become part of OSU's bid file.

14. BID PREPARATION COST:

OSU is not liable for costs incurred by the bidder during the ITB process.

15. RESPONSIVENESS REVIEW:

Bids will be reviewed for responsiveness. Bids that do not comply with the instructions, that are materially incomplete, that do not meet required specifications, or that are submitted by bidders who do not meet minimum qualifications may be deemed non-responsive. Written notice will be sent to bidders whose bid is deemed non-responsive and will include the reason the bid was determined non-responsive and the bidder's right to appeal.

16. AWARD:

Award will be made to the lowest responsive responsible bidder(s). In determining the lowest responsive responsible bidder OSU reserves the right to make award(s) by line

item, groups, entire bid, or any combination thereof. OSU reserves the right to delete any item from the award when deemed to be in the best interest of OSU. If a successful contract cannot be completed with the lowest responsive responsible bidder(s) after award, OSU may rescind its award to the bidder(s) and award to the next lowest responsive responsible bidder.

17. APPROVALS:

Contract award is subject to all required OSU approvals. OSU will have no obligation or liability whatsoever to the bidder selected as result of this ITB unless and until a contract satisfactory to OSU is approved and executed by both parties.

18. BID RESULTS:

A written notice of intent to award will be issued to all responsive bidders along with appeal rights for aggrieved bidders. The bid file will be available for responsive bidder's review during the appeal period. Bidders must make an appointment with the OSU Administrative Contact to view the bid file electronically. After the contract is executed or ITB canceled, the file will be available by making a Public Records Request through OSU's Public Records Request process.

19. CONTRACT REVIEW AND NEGOTIATION:

Prior to execution of a contract, the contract may be reviewed and negotiated. This review may result in modifications of the applicable terms and conditions specified on OSU's website, in the ITB, exhibits, addenda, or those proposed by a bidder. OSU's negotiation of, or acceptance of alternate terms and conditions, is at OSU's discretion as may be in the best interest of OSU.

20. INVESTIGATION OF REFERENCES:

OSU reserves the right to investigate and to consider the references and the past performance of any bidder with respect to evaluation and determining bidder's responsibility. OSU may consider such things as bidder's past performance, provision of similar goods or services, compliance with specifications, contractual obligations, and its lawful payment of suppliers, subcontractors, and workers.

III. SPECIFICATIONS AND QUALIFICATIONS

1. SPECIFICATIONS:

Specifications are included in the table below. If the Specification indicates on the right-hand column 'Y' then it is a required Specification. If it is 'N' it is not a required Specification. Bidders May Offer Demo units so long as they have not been in use at a customer's facility for longer than a one-week period. The Bidders will be rejected by PCMM if they do not meet the required specifications, and the customer will not be able to review those bids.

	Description	Required "Y/N"
1.	Ability to simultaneously analyze the chemical composition, particle size, and particle morphology of cement clinker, limestone, clay, slag, and fly ash. Provide results for up to 1000 individual particles in a single measurement to identify constituent materials that compose a blended cement.	Y
2.	Ability to measure particle size in a range of 0.5 to 1000 microns.	Y
3.	Ability to measure particle sizes in the range of 0.5 to 50 microns with a single setting (magnification).	Y
4.	Ability to provide morphological information on the particles measured in terms of size, length, width, area, perimeter, and equivalent radius.	Y
5.	Automated particle analysis with chemical identification.	Y
6.	Ability to provide digital images of particles.	Y
7.	Ability to provide a ramen spot size of 2 microns or less.	Y
8.	Equipment must enable blended cement powders to be able to separate particle size distribution for individual components based on chemistry (e.g., clinker, limestone, gypsum, slag, natural pozzolans, fly ash) enabling a PSD of each component or the entire blended system.	Y
9.	User-friendly graphical interface – Windows-based software must enable particles of the same size or chemistry to be examined together.	Y
10.	Options for wet suspension analysis.	N
11.	Ability to systematically disperse dry particles for consistent measure.	Y
12.	Calibration sample for performance verification with standard operating procedure.	Y

13.	785 nm or with polarizer and adjustable laser power (or similar).	N
14.	Ability to define user defined chemical library ramen spectra.	Y
15.	Provide computer, monitor, Window-based software necessary for data collection and analysis.	Y
16.	Freight Included in cost.	Y
17.	Lab Delivery and Installation within 10 weeks of placing the order.	Y
18.	No Tax shall be included.	Y

BRAND NAME OR EQUAL: Any manufacturers' names, trade names, brand names, information, catalogue numbers or source links specified in the solicitation are listed to describe the specifications and characteristics of desired products. Bidders may offer any brand, for which they are an authorized representative, that meets or exceeds the specification unless specified as "NO SUBSTITUTE". If bids are based on equivalent products, bidder should include the offered brand and part number with the original bid. Bids that do not include the offered brand or part number may cause that line item to be non-responsive. Bids lacking any written indication of intent to provide an equivalent product will be received and considered in complete compliance with the specification as listed in the ITB.

2. MINIMUM QUALIFICATIONS:

To qualify as a responsive bidder, the bidder must meet the minimum qualifications below.

	Description
1.	Bidder must be an authorized re-seller of the equipment manufacturer per bid.
2.	Bidder must have the ability to deliver, install, and train on the equipment within 10 weeks of the receipt of the order.

IV. SUBMITTALS

It is the bidder's sole responsibility to submit information in fulfillment of the requirements of this ITB. If submittals are not substantially compliant in all material respects with the criteria outlined in the ITB, it may cause the bid to be deemed non-responsive.

Bidders must submit the following information:

Submittal Document	Check-off
Description of how the goods offered specifically meet the Specifications listed in section III 1, including: • Description on the size of the cement powder sample that can be analyzed (.05 to 50 microns). • Description of the time it takes to obtain the spectral distribution distributed by chemical composition of 785 nm or with polarizer and adjustable laser power (or similar). • Demonstrate the measurement from the unit on cement/blended cement illustrating the capabilities of the equipment. • Describe the products methods to validate chemical composition and particle size and shape shall be demonstrated.	☐
Detailed information about how the proposer meets the Minimum Qualifications described in section III 2, including: • Demonstrate Bidders' ability to provide training for theory, equipment uses, hardware review, equipment general maintenance review, software training, application setup, and use. • Demonstrate Bidders' ability to provide customer support, both locally and remotely.	☐
Exhibit A, Certifications	☐
Exhibit B, Bid Price Sheet	☐
Exhibit C, References	☐
Exhibit D, Brochure Link to Video of Equipment	☐

EXHIBIT A CERTIFICATIONS

By signature below the undersigned certifies that they are authorized to act on behalf of the bidder and agrees and certifies that:

- the bidder, to the best of the undersigned's knowledge, is not in violation of any Oregon tax laws defined in ORS 305.380(4);
- they have read, understands, and agrees to be bound by the ITB and all exhibits and addenda;
- the information provided is true and accurate, and that providing incorrect or incomplete information may be cause for rejection of the bid or contract termination; and
- they will furnish the designated item(s) and/or service(s) in accordance with the ITB and the contract.

Signature: _____

Date: _____

Name: _____

Telephone: (____) _____

Title: _____

Email: _____

Company Name: _____

Address, City, State, Zip: _____

EXHIBIT B
BID PRICE FORM

ITEM #	DESCRIPTION	QTY	UNIT	UNIT PRICE	TOTAL PRICE
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
Shipping, freight, and handling must be included in quoted prices. Additional costs for such are disallowed. Delivery is F.O.B. destination, prepaid and allowed. Incoterm DDP-Delivered Duty Paid for international shipments.				TOTAL	\$

BIDDER NAME: _____

EXHIBIT C
REFERENCES

BIDDER NAME: _____

REFERENCE 1

Company Name: _____

Contact Name/Title: _____

Phone Number: _____

Email: _____

Goods/Services Provided: _____

REFERENCE 2

Company Name: _____

Contact Name/Title: _____

Phone Number: _____

Email: _____

Goods/Services Provided: _____

REFERENCE 3

Company Name: _____

Contact Name/Title: _____

Phone Number: _____

Email: _____

Goods/Services Provided: _____

REFERENCE 4

Company Name: _____

Contact Name/Title: _____

Phone Number: _____

Email: _____

Goods/Services Provided: _____

