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ASP Isotopes Inc. Commences Commercial Production of Enriched Silicon-28 at its Second Aerodynamic Separation Process (ASP) Enrichment Facility

- Silicon-28 is an isotope that is believed to assist in enabling quantum computing and improving the performance of next generation semiconductors for artificial intelligence.

- The Company expects to ship commercial product during 2Q25.

- The Company has already entered into two purchase agreements with US-based customers for kilogram quantities of Silicon-28 and is in discussions with multiple other global customers for kilogram quantities.

WASHINGTON, March 27, 2025 (GLOBE NEWSWIRE) -- ASP Isotopes Inc. NASDAQ: ASPI ("ASP Isotopes" or the "Company"), an advanced materials company dedicated to the development of technology and processes for the production of isotopes for use in multiple industries, today announced that it has started commercial production of enriched Silicon-28 at its second Aerodynamic Separation Process (ASP) enrichment facility in Pretoria, South Africa.

Many researchers believe that highly enriched Silicon-28 will be required by manufacturers of next-generation semiconductors. Naturally occurring Silicon has three isotopes – 28, 29 and 30. The 29 isotope has a ½ positive spin, which is an intrinsic form of angular momentum carried by elementary particles. In contrast, highly enriched Silicon-28 is spin-free where qubits are protected from sources of decoherence that causes loss of quantum information(1). In addition to its potential to process superior information such as qubits, it is believed that highly enriched Silicon-28 can conduct heat 150% more efficiently(2) than natural Silicon, which will potentially allow for chips to become smaller, faster and cooler.

ASP Isotopes' proprietary technology can enrich isotopes of low atomic mass (such as silane (SiH4), molecular mass of 32), as well as isotopes of heavier masses. Other companies developing methods to enrich silicon generally either enrich silicon tetrafluoride (SiF4) or a halo silane. Neither of these chemicals can be used directly by a semiconductor company and require chemical converting processes that potentially harm the purity of the final product. By processing silane directly, the Company believes that its finished product will be a higher quality and may be used by semiconductor companies without the need for additional chemical conversion processes.

"To create faster, smaller next-generation semiconductors, the world is likely going to require materials that are currently not available in commercial quantities", said Paul Mann, ASP Isotopes' Chairman and Chief Executive Officer. *"ASP Isotopes is currently working on many isotopically pure elements that we believe will help semiconductor companies create the chips that the world will require in the future to enable technologies such as quantum computing and artificial intelligence."*

The Company has previously announced that it has entered into two supply agreements with U.S.-based customers for highly enriched Silicon-28. The first is with a U.S.-based semiconductor company. The second is with a U.S.-based industrial gas company. The Company is currently in discussions with multiple other potential customers for the supply of highly enriched Silicon-28 and expects to sign more supply agreements during the next six months. The Company anticipates shipping the first commercial batches of highly enriched Silicon-28 during the second quarter of 2025.

(1) Isotopically Enriched Layers for Quantum Computers Formed by 28Si Implantation and Layer Exchange, Schneider, E and England, J; ACS Appl. Mater. Interfaces 2023, 15, 17, 21609–21617
(2) Penghong Ci, Muhua Sun, Meenakshi Upadhyaya, Houfu Song, Lei Jin, Bo Sun, Matthew R. Jones, Joel W. Ager, Zlatan Aksamija, and Junqiao Wu Phys. Rev. Lett. 128, 085901 – Published 23 February 2022

About ASP Isotopes Inc.

ASP Isotopes Inc. is a development stage advanced materials company dedicated to the development of technology and processes to produce isotopes for use in multiple industries. The Company employs proprietary technology, the Aerodynamic Separation Process ("ASP technology"). The Company's initial focus is on producing and commercializing highly enriched isotopes for the healthcare and technology industries. The Company also plans to enrich isotopes for the nuclear energy sector using Quantum Enrichment technology that the Company is developing. The Company has isotope enrichment facilities in Pretoria, South Africa, dedicated to the enrichment of isotopes of elements with a low atomic mass (light isotopes).

There is a growing demand for isotopes such as Silicon-28, which will enable quantum computing, and Molybdenum-100, Molybdenum-98, Zinc-68, Ytterbium-176, and Nickel-64 for new, emerging healthcare applications, as well as Chlorine-37, Lithium-6, and Uranium-235 for green energy applications. The ASP Technology (Aerodynamic Separation Process) is ideal for enriching low and heavy atomic mass molecules. For more information, please visit www.aspisotopes.com.

Forward Looking Statements

This press release contains "forward-looking statements" within the meaning of the safe harbor provisions of the U.S. Private Securities Litigation Reform Act of 1995. Forward-looking statements are neither historical facts nor assurances of future performance. Instead, they are based only on our current beliefs, expectations, and assumptions regarding the future of our business, future plans and strategies, projections, anticipated events and trends, the economy, and other future conditions. Forward-looking statements can be identified by words such as "believes," "plans," "anticipates," "expects," "estimates,"

“projects,” “will,” “may,” “might,” and words of a similar nature. Examples of forward-looking statements include, among others but are not limited to, statements relating to the commencement of supply of isotopes to customers and the application of new technology for the enrichment of isotopes, and statements we make regarding expected operating results, such as future revenues and prospects from the potential commercialization of isotopes, future performance under contracts, and our strategies for product development, engaging with potential customers, market position, and financial results. Because forward-looking statements relate to the future, they are subject to inherent uncertainties, risks, and changes in circumstances that are difficult to predict, many of which are outside our control. Our actual results, financial condition, and events may differ materially from those indicated in the forward-looking statements based upon a number of factors. Forward-looking statements are not a guarantee of future performance or developments. You are strongly cautioned that reliance on any forward-looking statements involves known and unknown risks and uncertainties. Therefore, you should not rely on any of these forward-looking statements. There are many important factors that could cause our actual results and financial condition to differ materially from those indicated in the forward-looking statements, including our reliance on the efforts of third parties; our ability to complete the construction and commissioning of our enrichment plants or to commercialize isotopes using the ASP technology or the Quantum Enrichment Process; our ability to obtain regulatory approvals for the production and distribution of isotopes; the financial terms of any current and future commercial arrangements; our ability to complete certain transactions and realize anticipated benefits from acquisitions and contracts; dependence on our Intellectual Property (IP) rights, certain IP rights of third parties; the competitive nature of our industry; and the factors disclosed in Part I, Item 1A. “Risk Factors” of the company’s Annual Report on Form 10-K for the fiscal year ended December 31, 2023 and any amendments thereto and in the company’s subsequent reports and filings with the U.S. Securities and Exchange Commission. Any forward-looking statement made by us in this press release is based only on information currently available to us and speaks only as of the date on which it is made. We undertake no obligation to publicly update any forward-looking statement, whether as a result of new information, future developments or otherwise. No information in this press release should be interpreted as an indication of future success, revenues, results of operation, or stock price. All forward-looking statements herein are qualified by reference to the cautionary statements set forth herein and should not be relied upon.

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