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Aeluma Joins AIM Photonics as Full Industry Member to Accelerate Quantum Dot Laser Technology for Silicon Photonics

Quantum Dot Technology for Silicon Photonics Critical for AI, Quantum Computing, Sensing and Communications

GOLETA, CA / ACCESSWIRE / January 2, 2025 /Aeluma, Inc. (OTCQB:ALMU), a semiconductor company specializing in high performance, scalable technologies for mobile, automotive, AI, defense and aerospace, communication and quantum computing, announced today that it has become a full industry member of the American Institute for Manufacturing Integrated Photonics (AIM Photonics).

AIM Photonics is one of nine Manufacturing Innovation Institutes established by the U.S. Department of Defense. The mission of AIM Photonics is to advance integrated photonic circuit manufacturing technology development in the U.S. The Institute's prototyping services include silicon photonics multi-project wafer (MPW) services to shorten design time, improve manufacturing efficiency, and reduce the price of entry for companies developing new applications. The silicon photonics prototyping services operate through the Albany NanoTech Complex in Albany, New York - claimed to be the world's most advanced publicly owned 300mm wafer R&D facility.

Full membership in AIM Photonics provides Aeluma with a variety of benefits. The Institute unites large and small companies with academic institutions, technical trade organizations, and U.S. government agencies. Aeluma joins other AIM Photonics industry members including 3M, Lockheed Martin Corporation, L3 Harris, Raytheon Technologies Corporation, Synopsys, Seagate Technology, The Aerospace Corporation, and more.

"Aeluma has been leveraging its large-diameter, high performance semiconductor platform to develop product offerings for mobile devices, quantum computing, AR/VR, defense and aerospace, and AI," said Matthew Dummer, Ph.D., Director of Technology at Aeluma. "Our collaboration with AIM Photonics has been beneficial on several fronts, and we've made significant progress in advancing the technology."

Aeluma has collaborated with AIM Photonics for more than two years as part of an ongoing government-directed project (GDP) involving AIM Photonics, industry partners, and universities. The primary goal of the GDP is to add quantum dot laser technology to AIM Photonics' silicon photonics offerings. Silicon photonics will substantially benefit from monolithically integrated light sources, the lack of which is considered an impediment that limits the technology's ultimate scalability.

In support of the GDP, Aeluma has been leveraging its 300mm metalorganic chemical vapor deposition (MOCVD) capability to deposit the required compound semiconductor materials onto AIM Photonics 300mm silicon photonics wafers.

Adding light source technology directly into the silicon photonics platform would enable increased scalability, higher energy efficiency, and simplified assembly and packaging. These attributes will benefit silicon photonics applications including optical interconnects for data centers, high performance computer (HPC) systems, AI, quantum computing, telecommunications and optical networks, health and biomedical sensing including point-of-care diagnostics, lidar sensing and more.

"Significant progress has been made, and Aeluma's full membership will help accelerate the adoption of this technology," said David Harame, Ph.D., Chief Operating Officer at AIM Photonics. "Continued collaboration with Aeluma and other partners in advancing quantum dot laser integration brings the integrated photonics community one step closer realizing the full potential of silicon photonics."

About Aeluma, Inc.

Aeluma develops cutting-edge semiconductor and optoelectronic technologies for sensing, communication, and AI applications. Aeluma has pioneered advanced semiconductor manufacturing techniques using high-performance compound semiconductor materials on large-diameter substrates commonly used for mass-market microelectronics. The technology has the potential to enhance performance and scale manufacturing for a range of industries, including defense and aerospace, automotive, AR/VR, AI, and quantum computing. Headquartered in Goleta, California, Aeluma focuses on transforming high-performance photonic technologies critical for emerging applications and broad market adoption. Learn more at www.aeluma.com.

About AIM Photonics

The American Institute for Manufacturing Integrated Photonics (AIM Photonics) is one of nine Manufacturing Innovation Institutes established and managed by the U.S. Department of Defense to advance new technology and capabilities into products and systems that help secure national defense and economic priorities. AIM enables current and future integrated photonics technologies with the goal to help U.S. companies - both small and large - develop innovative products and services by providing them with technology on-ramps and access to strategic U.S. government, industry, and academic communities. More information can be found at www.aimphotonics.com.

Forward-Looking Statements

All statements in this press release that are not historical are forward-looking statements, including, among other things, statements relating to the Company's expectations regarding its market position and market opportunity, expectations and plans as to its product development, manufacturing and sales, and relations with its partners and investors. These statements are not historical facts but rather are based on the Company's current expectations, estimates, and projections regarding its business, operations and other similar or related factors. Words such as "may," "will," "could," "would," "should," "anticipate," "predict," "potential," "continue," "expect," "intend," "plan," "project," "believe," "estimate,"

and other similar or related expressions are used to identify these forward-looking statements, although not all forward-looking statements contain these words. You should not place undue reliance on forward-looking statements because they involve known and unknown risks, uncertainties, and assumptions that are difficult or impossible to predict and, in some cases, beyond the Company's control. Actual results may differ materially from those in the forward-looking statements as a result of a number of factors, including those described in the Company's filings with the Securities and Exchange Commission. The Company undertakes no obligation to revise or update information in this release to reflect events or circumstances in the future, even if new information becomes available.

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