NYCREATES

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NY CREATES ANNOUNCES

NEW FEDERALLY FUNDED AIM PHOTONICS PROGRAM

AIM-Led team selected for research project under DARPA's Lasers for Universal Microscale Optical Systems (LUMOS) program

Technology will advance many applications such as self-driving vehicles, augmented reality, 3-D camera technology, and quantum computing

Albany, NY – American Institute for Manufacturing Integrated Photonics (AIM Photonics), a program of NY CREATES today announced $19 million in research program awards for advanced integrated photonics under The Defense Advanced Research Projects Agency's (DARPA) Lasers for Universal Microscale Optical Systems (LUMOS) program.

The LUMOS program will enable efficient on-chip optical gain in highly capable integrated photonics platforms. This will enable complex,

end-to-end photonic functionality on a single crystal silicon substrate for disruptive optical microsystems.

This $19 million DARPA contract will support a team of academic, industrial, and government partners, led by AIM Photonics, and continues the growth and expansion of this critical Department of Defense (DoD) funded manufacturing institute.

AIM Photonics is the nation's premier Photonic Integrated Chip (PIC) manufacturing institute advancing Integrated Photonic technology and associated workforce development. A public-private partnership founded in 2015, AIM Photonics is celebrating five years of success and is nationally recognized for creating the world's first open-access complete Integrated Photonic manufacturing ecosystem. AIM's ecosystem provides the photonics industry, the academic research community, and the DoD access to a full suite of design tools, advanced wafer fabrication, testing, and chip packaging technologies throughout the entire product development cycle.

"The AIM Photonics consortium, our Rochester and Albany-based team, and I thank DARPA for trusting us to lead the development of this critical next gen PIC technology," **said Dr. Michael J. Cumbo, CEO of AIM Photonics.** "The advantages of on-chip lasers will provide not only significant benefits in military microsystems, but also in diverse commercial applications, including autonomous vehicles, augmented reality, big data, biosensing, and quantum computing.

Empire State Development Acting Commissioner, and President & CEO-designate Eric Gertler said, "AIM Photonics is advancing New York State's leadership in optics, photonics and imaging by attracting industry innovators from across the globe, building on Governor Cuomo's strategic economic vision that has grown the Finger Lakes region as an Optics Photonics and Imaging industry hub."

Other program partners include; University of California Santa Barbara (UCSB), Analog Photonics, IQE, and NAsPIII/V GmbH.

"UCSB's extensive experience in laser research and integrated photonics, and recent collaboration with AIM Photonics, DoD experts and key defense contractors, will help accelerate the use of lasers on silicon chips," **said Dr. John Bowers, Professor UCSB, and Deputy CEO of AIM Photonics.** "We thank the government for providing the means to advance this critical technology."

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In addition to addressing the equipment and process challenges associated with this technology, the LUMOS team will develop a standard laser design into non-traditional silicon-based integration. AIM Photonics Tier 1 member and key design partner, Analog Photonics, will help implement these designs, having already established multiple Process Design Kits in the Albany Fab.

"Eight years ago, a team of engineers from the Albany Fab and Analog Photonics began implementing our first PIC designs and our first DARPA program," said **Dr. Mike Watts, CEO of Analog Photonics, and AIM Photonics Chief Technology Officer.** "Back then, we didn't have the capabilities to even consider direct integration of gain on-chip. Fast forward eight years later, including five years with AIM Photonics, we are now accelerating this technology to a level of maturity approaching CMOS electronics, including LIDAR on a chip which will ultimately make self-driving vehicles mainstream and 3D camera technology standard in consumer electronics."

A vital component of NY CREATES is AIM Photonics, with more than 126 consortium members, including those focused on data communications, sensors, quantum and neuromorphic computing. AIM featured services include our industry leading Process Design Kit (PDK), Multi Project Wafer (MPW), and Test, Assembly and Packaging (TAP) capabilities. AIM's comprehensive set of silicon Photonic Integrated Circuit (PIC) devices are enabling the implementation of next-generation products.

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About NY CREATES

NY CREATES serves as New York's bridge to the advanced electronics industry, as a resource for public-private and academic partnerships within New York State to create and lead industry connected innovation and commercialization projects that attract investment and create growth in high technology jobs. Managing public and private investments of more than $20 billion and boasting more than 2700 industry experts and faculty, NY CREATES is a global leader in innovation and commercialization. Learn more at www.NY-Creates.org.

About AIM Photonics

AIM Photonics is one of several Manufacturing Innovation Institutes, an industry-driven public-private partnership that focuses the nation's premiere capabilities and expertise to capture critical global

manufacturing leadership in a technology that is both essential to national security and positioned to provide a compelling return-on-investment to the U.S. economy. Learn more at www.aimphotonics.com

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