



For Immediate Release

SkyWater Begins Work with MIT on Next-Generation Technology Development for DARPA Electronics Resurgence Initiative

3D Monolithic System-on-a-Chip (3DSOC) Technology Has the Potential to Deliver >50X Improvement in Computing Performance

August 13, 2018, BLOOMINGTON, Minn. –SkyWater Technology Foundry, the industry’s most advanced U.S.-based and U.S.-owned Trusted Foundry, today announced its involvement in the Defense Advanced Research Projects Agency (DARPA) Electronics Resurgence Initiative (ERI). SkyWater is working alongside the Massachusetts Institute of Technology (MIT) on the largest of the ERI programs: the Three Dimensional Monolithic System-on-a-Chip (3DSOC).

The work at MIT and SkyWater will focus on the design and development of next-generation 3D Monolithic System-on-a-Chip (3DSOC) Technology to create densely integrated logic and memory products. The 3DSOC is created through vertically interleaving layers of Carbon Nanotube (CNT) based Field Effect Transistors (FETs) with Resistive Random Access Memory (RRAM). This combination has the potential to enable a new class of microelectronic devices and systems that can deliver a 50X improvement in performance over state-of-the-art 7nm 2D CMOS technology, but fabricated using 90nm technology. The benefits of such breakthrough technology will set a new threshold for performance and energy efficiency for a class of products and devices that previously would have been constrained by cost and design limitations.

“3DSOC technology has the potential to have a profound impact on our industry in the way we look at performance scaling and power efficiency in next-generation devices, products, and technology platforms,” said Thomas Sonderman, president, SkyWater Technology Foundry. “As a U.S.-owned and industry-proven Trusted Technology Foundry, we’re uniquely positioned to closely collaborate with MIT and DARPA on the development and production of this technology in the coming years. We’re proud to contribute to this effort to help secure U.S. leadership in semiconductor design and manufacturing for years to come.”

The MIT investigators are Max Shulaker, Emmanuel E. Landsman Career Development Professor of Electrical Engineering and Computer Science, and Anantha Chandrakasan, dean of the MIT School of Engineering and Vannevar Bush Professor of Electrical Engineering and Computer Science. “We are



tremendously excited to be working with SkyWater to transition the 3DSOC technology from our academic labs into the real world, thanks to their unique capabilities of advanced fabrication, high-volume production, and technology development,” Shulaker said. The work will be undertaken at MIT’s Microsystems Technology Laboratories (MTL).

About SkyWater Technology Foundry

SkyWater is a U.S.-based technology foundry, specializing in the development and manufacturing of a wide variety of differentiated semiconductor manufacturing solutions. The company brings advanced development capabilities alongside volume production, which enables customers with unique technology needs to innovate and scale.

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To learn more, visit www.skywatertechnology.com.