

Electroninks Chosen as Key Materials Supplier for DARPA AMME Program at The University of Texas at Austin

The DARPA program will use Electroninks metal complex inks to advance high-throughput 3D interconnection and RDL technologies



AUSTIN, TX, UNITED STATES, June 16, 2025 /EINPresswire.com/ -- [Electroninks](https://www.electroninks.com/), the leader in metal complex inks for additive manufacturing and advanced semiconductor packaging, today announced that The University of Texas at Austin has selected Electroninks as the exclusive supplier for the core enabling materials technology for its work under the Defense Advanced Research Projects Agency (DARPA) Additive Manufacturing of MicrosystEms (AMME) program. The initiative aims to revolutionize the production of 3D non-planar microsystems by developing new materials and additive manufacturing technologies. Its goal is to demonstrate a high-throughput process that integrates multiple materials – such as conductors and insulators – within a single structure, enabling complex designs beyond what's possible with conventional methods.

As part of AMME, UT Austin's Department of Mechanical Engineering is working alongside a number of industry leaders and academic institutions to drive breakthrough innovations in advanced semiconductor packaging. Electroninks, a key technology provider in the project, will supply critical materials necessary for AMME's new 3D interconnection techniques. By developing innovative conductive materials optimized for high-speed, large-area lithographic patterning, Electroninks' contributions will help overcome fundamental limitations in current semiconductor packaging processes.

AMME seeks to transform microsystem manufacturing by pioneering advancements in high-speed, high-volume, and high-resolution multi-material production. This cutting-edge additive manufacturing process will enhance commercial devices with next-generation integrated technologies while enabling rapid adaptability to evolving mission requirements—much like additive manufacturing has revolutionized complex prototyping. Through AMME, DARPA aims to

break through the inherent limitations of traditional microsystem fabrication, unlocking new possibilities for innovation and scalability.

Electroninks' metal complex inks will specifically be used to significantly increase data transfer rates and dramatically lower energy consumption of technology platforms. These advanced inks will streamline semiconductor fabrication, boosting yields, improving design flexibility for 3D packages, and cutting packaging time from months to hours. These inks also allow dies to be packaged closer together, meaning electrons travel smaller and shorter distances, increasing transfer speeds and reducing energy consumed. The implications are significant when considering that a single AI data center by 2035 will require several gigawatts, which is the output of an entire nuclear power plant; even a five percent reduction in energy consumption would equal that of building a modern coal power plant.

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"AMME represents a significant step forward in semiconductor technology, addressing critical challenges in AI hardware and advanced packaging," said Professor Michael Cullinan. "By integrating cutting-edge materials with state-of-the-art holographic lithography, we aim to drive new levels of efficiency and capability in semiconductor manufacturing."

DARPA's investment underscores the strategic importance of advancing next-generation 3D integration technologies to maintain U.S. leadership in semiconductor innovation and defense-related applications. The collaboration between academia, industry, and government-backed research institutions will help accelerate the commercialization of advanced manufacturing techniques critical to the future of high-performance computing and artificial intelligence-driven applications.

"We are obviously poised to be a significant partner for this consortium and play a key role in fulfilling DARPA's goals," stated Brett Walker, PhD, co-founder and CEO of Electroninks. "This is great news for the State of Texas, innovation and the future of technology."□

For more information on Electroninks products and solutions, please visit www.electroninks.com

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About Electroninks

Electroninks Incorporated is a world-leader in the commercialization of advanced materials for electronics and semiconductor packaging. We have developed a full suite of proprietary metal complex conductive ink solutions and complimentary material sets, thus accelerating time to market for both new innovations and drop-in manufacturing breakthroughs.

Electroninks' metal complex inks – including silver, gold, platinum, nickel and copper – deliver higher conductivity, manufacturing flexibility, and cost-effectiveness. The company's conductive inks provide reliable solutions for applications in printed circuit board (PCB) manufacturing, semiconductor packaging, consumer electronics, wearables, medical devices and more. We also partner closely with best-in-class equipment and integration partners to provide customers with a total ink and process solution with the ultimate goal to reduce the manufacturing costs and complexity.

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