

A Decade of Pioneering Collaboration: PulseForge and nScript Partner to Advance 3D Additive Fabrication

This equipment is the fusion of nScript's multi-nozzle microdispensing material extrusion systems and PulseForge's state-of-the-art digital thermal processes.

AUSTIN, TEXAS, UNITED STATES, December 15, 2023 /EINPresswire.com/ -- In a collaboration that traces its origins back to 2014, NovaCentrix, the then parent company of PulseForge, and nScript unveiled an integrated equipment solution designed to advance 3D additive fabrication. This technology had its public debut at the IDTechEx Printed Electronics USA event in Santa Clara, CA, on November 18-19, 2014. Over the past decade, this partnership has become influential in the rapidly evolving landscape of [3D printing](#).

At the core of this equipment lies the fusion of nScript's multi-nozzle microdispensing material extrusion systems and PulseForge's digital thermal processes. The multi-nozzle system offers customization and production volumes, benefiting clients. This integration also includes in-situ component pick-and-place, enhancing the system's functionality. This system stems from integrated multiple sub-systems, enabling 3D printing, dispensing materials, and curing within a cohesive system. This versatile integration has proven effective in constructing integrated hybrid circuits on 3D surfaces and manufacturing devices on flexible, low-temperature, and rigid planar surfaces.

A central component of this system is PulseForge [photonic curing](#) tool. This tool utilizes light pulses, each lasting just microseconds, generated by flash lamps. These pulses elevate the surface temperature of target materials to high levels without compromising the integrity of the underlying material, enabling high-temperature processing on low-temperature substrates. Following this collaboration, the first integrated commercial system was installed at the United States Army Research Redstone Arsenal [1]. This system represents a commercially available 3D additive manufacturing solution to construct functional monolithic 3D devices. Subsequent to this milestone, the integrated system has garnered a global presence, including a notable presence in Australia. It serves a spectrum of industrial applications, spanning from the production of cell phone circuits and touch sensors to various defense-related technologies.

Today, PulseForge and nScript, through their enduring partnership, have unveiled a new comprehensive turnkey solution. This solution will produce 3D structures, cure both functional and non-functional materials using photonic curing, dispense solder paste, and accomplish

successful soldering of surface mount components using photonic soldering.

This collaborative venture, combined with the resultant system, will be delivered to a large customer specializing in the production of textile-integrated systems for physiological and asset monitoring. This has been made possible through the introduction of photonic soldering, another innovation from PulseForge, which enables attaching surface mount devices to temperature-sensitive substrates in a matter of seconds, using traditional solder paste. This exemplifies how the sustained collaboration between PulseForge and nScript is advancing 3D additive manufacturing.

Ken Church, CEO of nScript, expressed his thoughts on this partnership, "Over the past decade, the collaboration between PulseForge and nScript has set benchmarks for innovation and reliability. This integrated solution represents a culmination of our shared vision to advance additive manufacturing, offering solutions that will drive progress in the AME landscape."

Mr. Jonathan Gibson, CEO of PulseForge, added, "We have been enthusiastic about collaborating with nScript to harness our PulseForge tools' material processing capabilities to a wide array of applications. The market demands capabilities to foster designs, and we are thrilled to meet that demand."

Over the past ten years, this partnership has led to significant advancements in 3D additive fabrication, paving the way for new frontiers in design, materials, and manufacturing. The collaboration between PulseForge and nScript continues to shape the future of 3D printing technology, offering innovative solutions for various industries and driving progress in additive manufacturing.

About PulseForge

PulseForge, Inc. utilizes applied energy in a precise and targeted manner to enable innovation in industrial manufacturing. Our expertise and tools empower our customers to explore novel materials and manufacturing methodologies, driving dynamic and efficient production at an industrial scale. To learn more, please visit www.pulseforge.com.

About NovaCentrix

Considered the expert in next-gen printed electronics, for over twenty years, Austin, Texas, based NovaCentrix is the go-to leader for industry-transforming conductive inks and nanopowders. To learn more, please visit www.novacentrix.com.

About nScript

nScript designs and manufactures award-winning, next-generation, high-precision micro-dispensing, 3D manufacturing equipment and provides solutions for industrial applications with unmatched accuracy and flexibility. Serving the printed electronics, electronics packaging, communications, printed antenna, chemical/pharmaceutical, defense, space, and 3D printing industries, our systems are widely used in the military, academic and research institutes,

government agencies and national labs, and private companies.

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Reference

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