

NovaCentrix and PulseForge Showcase Breakthrough in Flexible Hybrid Electronics at ICEP 2024

NovaCentrix has collaborated with PulseForge to present groundbreaking advancements in flexible hybrid electronics (FHE) at ICEP 2024 held in Toyama, Japan.

AUSTIN, TEXAS, UNITED STATES, June 13, 2024 /EINPresswire.com/ -- [NovaCentrix](#), a global leader



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Charles Munson

in printed electronics materials such as conductive inks, has collaborated with [PulseForge](#), a pioneer in advanced thermal processing solutions, to present groundbreaking advancements in flexible hybrid electronics (FHE). This collaborative effort was highlighted at the International Conference on Electronics Packaging (ICEP) held in Toyama, Japan from April 17-20, 2024.

In their [joint presentation](#), NovaCentrix and PulseForge unveiled new findings that address critical performance gaps in FHE manufacturing, particularly in interconnection and component attachment. The study focuses on the innovative use of PulseForge photonic curing and soldering

to enhance the structural quality and performance of FHE devices, which are integral to the next generation of low-temperature and low-cost flexible substrates.

Advancements in Photonic Curing and Soldering

The research showcased at ICEP 2024 detailed the use of photonic curing and photonic soldering processes to create a flexible hybrid circuit. The circuit components were attached to ink traces printed with Metalon® HPS-FG32 using commercially available solder paste and built on low-temperature polyethylene terephthalate (PET) film. This approach yielded circuits with superior electrical performance, avoiding thermal damage typically associated with traditional methods.

Key highlights of the study include:

Enhanced Electrical Conductivity: Photonic curing with the PulseForge model IX4-52-45 system produced higher electrical conductivity in printed circuits compared to those cured in a convection oven.

Superior Mechanical Strength: The photonic soldering process resulted in solder junctions with higher mechanical strength. The photonic-cured traces exhibited an average shear force of 1.36 kg, compared to 0.64 kg for oven-cured samples.

Structural Integrity: Scanning electron microscope (SEM) and energy-dispersive x-ray spectroscopy (EDS) analyses revealed distinctive boundaries and improved structural integrity in photonic-cured traces, highlighting the formation of stronger metallurgic structures.

Impact and Future Applications:

The collaboration between NovaCentrix and PulseForge demonstrates the significant potential of photonic curing and soldering in advancing the field of flexible hybrid electronics. The results indicate a promising pathway for overcoming current limitations in FHE manufacturing, offering improved electrical performance, mechanical strength, and structural integrity.

“This collaboration exemplifies our commitment to innovation in the field of printed electronics,” said Charles Munson, CEO of NovaCentrix. “The advancements achieved through our partnership with PulseForge open new possibilities for the development of new materials and processes that push forward the ecosystem of high-performance printed and flexible electronics that are both economical and environmentally friendly.”

“We are thrilled to collaborate with NovaCentrix and showcase our advanced photonic curing and soldering capabilities,” added Jonathan Gibson, CEO of PulseForge. “The results presented at ICEP 2024 highlight the transformative potential of our technology in enhancing the performance and quality of printed electronics. This partnership underscores our dedication to pushing the boundaries of what’s possible in electronic manufacturing.”

ABOUT NOVACENTRIX:

NovaCentrix is a global leader in advanced material solutions, specializing in conductive inks for high-performance printed electronics. The company's industry-leading Metalon® conductive inks are designed to meet the demanding needs of various industries, including flexible electronics, photovoltaics, and medical devices. With a commitment to innovation and excellence, NovaCentrix develops cutting-edge solutions that enable efficient and sustainable manufacturing processes. NovaCentrix is dedicated to driving technological advancements that empower customers to achieve new heights of efficiency and product performance.

ABOUT PULSEFORGE:

PulseForge, Inc. is a leading provider of advanced processing solutions for the electronics industry. By harnessing applied energy with precision and focus, PulseForge enables manufacturers to achieve superior results in curing, soldering, surface treatment and semiconductor manufacturing processes while optimizing efficiency and sustainability. Their expertise and cutting-edge tools empower customers to explore novel materials and manufacturing methodologies, driving dynamic and efficient production on an industrial scale.

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