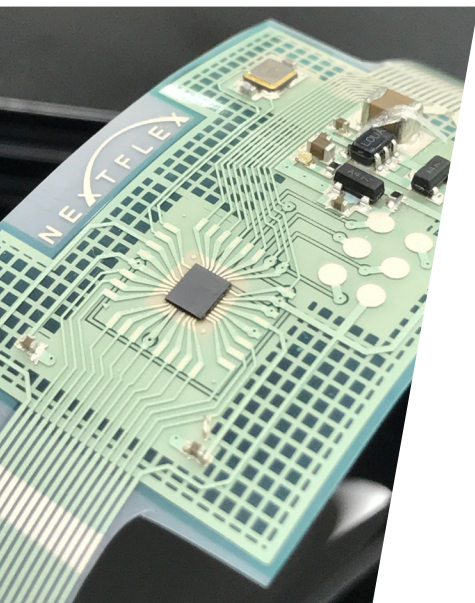


BUILDING THE NEXT GREAT THING IN FLEXIBLE HYBRID ELECTRONICS

NextFlex, a Manufacturing USA® institute, advances U.S. manufacturing of flexible hybrid electronics.

Manufacturing USA, a public-private partnership with 14 manufacturing institutes across the nation, connects companies, academic institutes, non-profits, and local, state, and federal entities to solve industry-relevant advanced manufacturing challenges in new technology areas with the goals of enhancing industrial competitiveness and economic growth and strengthening national security.



Technology Focus Area

Flexible Hybrid Electronics: combine low-cost printed circuits with the processing power of thin semiconductors to create a new category of electronic devices that can stretch, bend, and flex to conform to surfaces. Flexible hybrid electronics circuits are being built into a wide range of products that bend with the contours of our world or bodies. The low-cost, small size, and reduced weight of these devices creates versatile products that deliver the “Internet of Things. Flexible hybrid electronics-enabled products are being used in human health and performance monitoring, structural health monitoring, (e.g. buildings and bridges), soft robotics and antennas.

Approach to Innovation and Collaboration

NextFlex brings together partners to overcome the manufacturing challenges in commercializing cutting-edge flexible hybrid electronics products that will enhance our lives. This is done through:



Technology roadmaps and funded collaborative projects



Shared manufacturing labs at the NextFlex Technology Hub



Education and workforce training through FlexFactor®

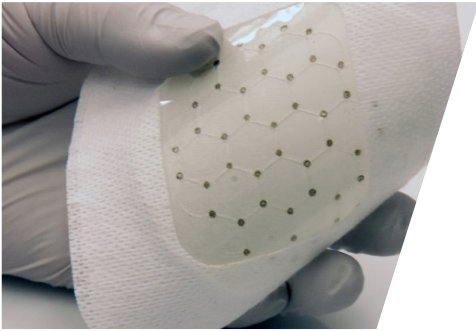
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COLLABORATIVE PROJECT EXAMPLES

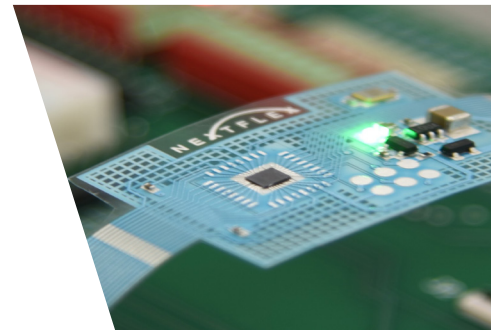
“GE benefits from participating in NextFlex projects because they advance technology in a collaborative, low-risk way, helping us to realize our vision of healthcare in the future.”

– Azar Alizadeh, Principal Scientist, GE Global Research



SMART BANDAGE: Purdue University, Integra Life Sciences, Indiana University, and Western Michigan University are partnering with NextFlex to develop a bandage that can both measure and manage oxygen levels in a wound and promote faster healing compared to a standard bandage.

FLEXIBLE ARDUINO®: NextFlex has successfully proven the robustness of the flexible hybrid electronics manufacturing process by producing multiple functional samples of a flexible Arduino. The NextFlex process for manufacturing the flexible Arduino uses 60% fewer process steps, resulting in faster manufacturing at lower cost and an end-product that is smaller, two-thirds lighter, and usable in more applications than a rigid board Arduino.



FLEXFACTOR® TRAINING FOR STUDENTS: The program is reaching a diverse population of youth and transitioning adults while helping to increase the numbers of women, veterans, and under-represented populations in technology and advanced manufacturing. NextFlex's proprietary FlexFactor program uses a project-based STEM learning format that combines skill-building in entrepreneurship, product development, and flexible hybrid electronics technology.

“NextFlex has become the focal point of the flexible hybrid electronics ecosystem by facilitating much of the discussion around this evolving technology and drawing together a diverse community of subject matter experts that are driving advancements at a rapid pace.”

– Joseph Kunze, Ph.D., Founder, President, CEO, SI2 Technologies, Inc.