NEXTFLEX

America's Flexible Hybrid Electronics Manufacturing Institute

Ashton Carter, former Secretary of Defense, announced NextFlex, the 7th MII, on August 28, 2015.

A New Era for American Manufacturing

NextFlex is a leading force in the Manufacturing USA network of institutes. Formed in 2015 through a cooperative agreement between the US Department of Defense (DoD) and FlexTech Alliance, NextFlex is a consortium of companies, academic institutions, non-profits and state, local and federal governments with a shared goal of advancing U.S. manufacturing of FHE. Since its formation, NextFlex's elite team of thought leaders, educators, problem solvers, and manufacturers have come together to collectively facilitate innovation, narrow the manufacturing workforce gap, and promote sustainable manufacturing ecosystems.

Flexible Hybrid Electronics: A Smarter, Lighter, Safer, Greener Future

FHE offers the promise to transform powerful, yet traditionally bulky electronics into formats that bend, stretch, fold, and conform to the contours of our world, whether a human body, a vehicle, infrastructure, and other objects. The next generations of electronics will reveal smarter and lighter watches and other consumer wearables; health monitoring devices, including intelligent patches and bandages for medical treatments; structural health monitoring to protect and optimize buildings, vehicles, bridges, and more; and "soft" robotics, including advanced prosthetics that can assist, restore, or enhance physical capabilities.

Protecting Newborns
An FHE patch will decrease the need to draw blood, especially from premature babies who have very little blood and very small veins.

Healthy Warfighters
Smart, wireless patches will continuously monitor cognitive abilities and provide early warning when operating under dangerous levels of stress, fatigue, and distraction.

Safe Structures
Conformal or integrated devices will sense and report on the state of infrastructure, vehicles, logistics, or the environment.

Soft Robotics
Advanced flexible electronics for prosthetics will assist, restore, and enhance physical capabilities.

NextFlex Advances the Field of Flexible Hybrid Electronics in Two Major Ways:

1. Providing project funding.
NextFlex solicits project ideas to fill gaps in manufacturing capability and to demonstrate the manufacturability of FHE technologies. Project Calls are awarded through a competitive peer review process to address these areas: human monitoring systems, asset health monitoring, integrated array antennas, and soft robotics.

2. Building the workforce of the future.
NextFlex is developing an educated and trained workforce to support FHE manufacturing. We assess industry demand and talent pool supply, and create new educational pathways to connect the two. Future FHE initiatives will be met with a ready workforce of technicians, researchers, and engineers.

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