



**ADVANCED FUNCTIONAL
FABRICS OF AMERICA**

NDIA Small Business Innovation Summit
12/06/2023



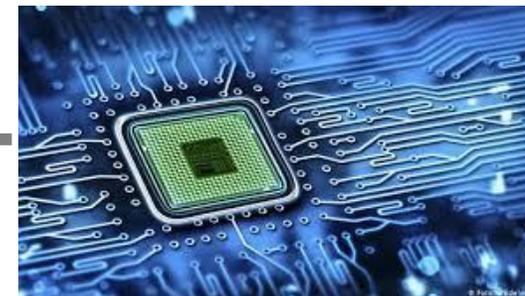
Creating a New Domestic Advanced Functional Fiber and Fabric Industry



Fibers / Textiles



Semiconductors / Advanced Materials

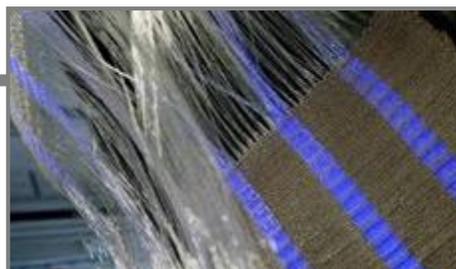


Fibers that are Devices

Fibers and yarns with engineered functionality, complex architectures, and disparate materials compositions

Fabrics as Systems

Fabrics that see, hear, sense, communicate, store and convert energy, regulate temperature, monitor health, process and store data, and change color.



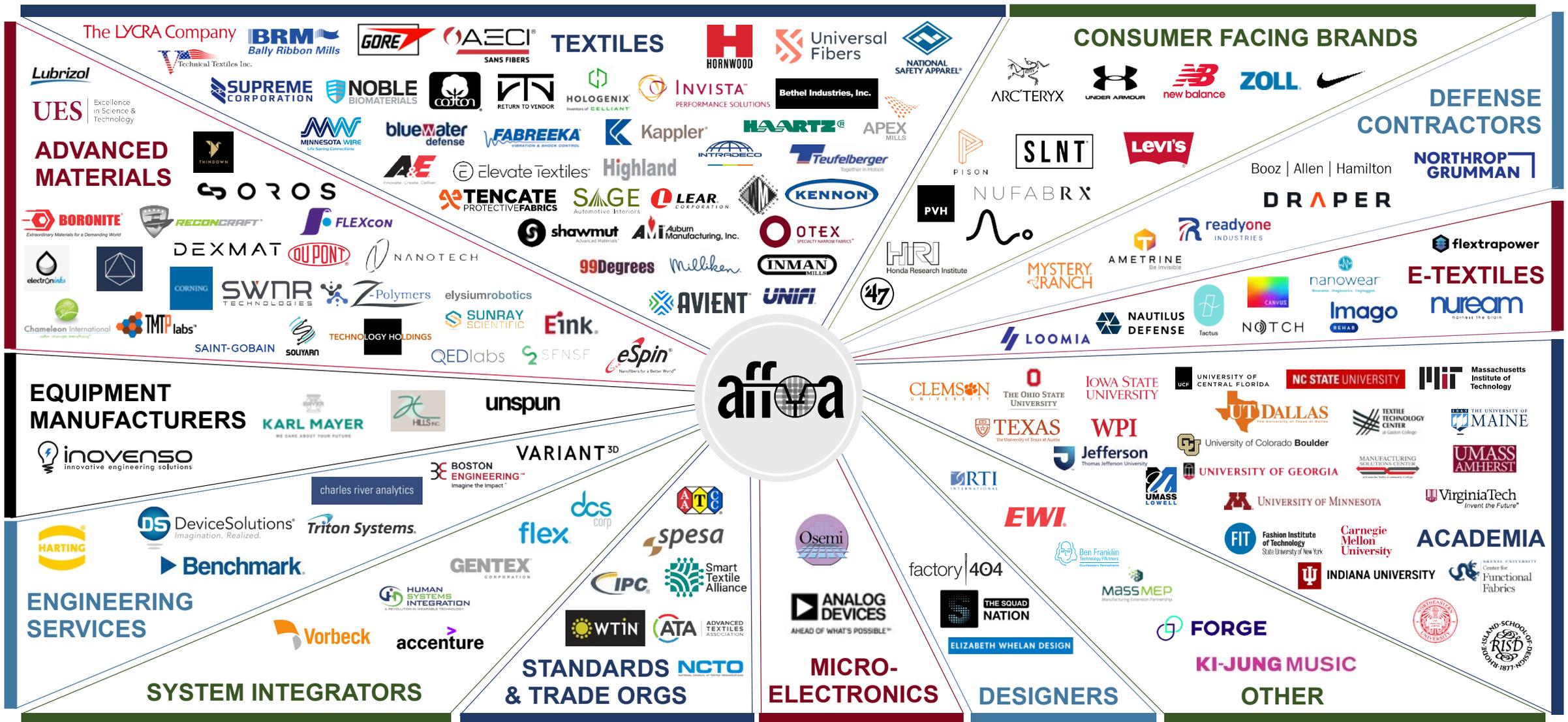
Commercial Applications

Generate new markets

Defense Applications

Solve critical defense needs

Fabric Innovation Network Capabilities



AFFOA's Technical and EWD Thrust Areas



Soft System Development

- Human health and performance monitoring
- Healthcare wearables
- Medical textiles



Environmental Protection

- Thermal regulation platforms for arctic environments
- Advanced insulation tech
- Chemical, biological, radiological, nuclear, and explosive protection



Multi-functional Materials

- Functional composites
- Aerospace-grade silica textiles
- Multimaterial fibers
- Biosafety level-4 Suit
- Multifunctional materials
- PPE
- Advanced textile chemistries



Sustainable Textiles & Processes

- Textile circularity
- Bioderived fibers
- Biomanufacturing



Large-Area Distributed Sensing Technologies and Systems

- Structural health monitoring
- Persistent undersea sensing
- Large-area sensing



Size, Weight and Power Reduction Technologies

- Performance communications
- Textile power & data infrastructure
- Textile sensing and actuation
- Signature management



Digital Engineering & Textile Manufacturing Scale-Up

- E-Textile digital design tools
- Digital manufacturing tools
- Process design rules
- Automated manufacturing



Education & Workforce Development

- K-12 STEM engagement
- Curriculum development
- AFF workshops

