

**TEXTILE FACILITY EQUIPMENT:**



**Instron® 5500R Series**

**Braiding Machine**



**Knitting Machine**



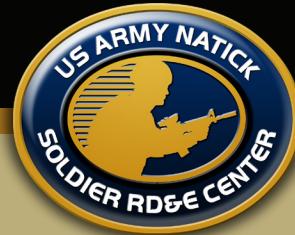
**Yarn Twister**



**Manual Loom**



**Semi-Automated Loom**



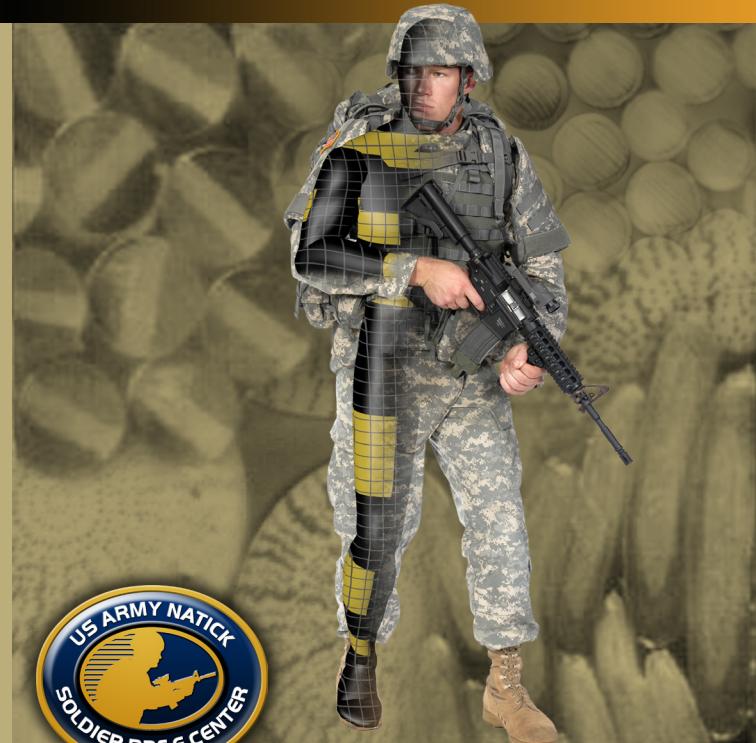
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**HIGH  
PERFORMANCE  
FIBER & TEXTILE  
FACILITY  
(HPFTF)**



# HIGH PERFORMANCE FIBER & TEXTILE FACILITY (HPFTF)

## HIGH PERFORMANCE FIBER & TEXTILE FACILITY:

The High Performance Fiber & Textile Facility (HPFTF) combines NSRDEC, academia and industry expertise in novel fiber/textile technology to invent and rapidly transition new optical, electronic, high strength, flame retardant and reactive materials to Warfighters and First Responders.



**Mono/Bi-Component Fiber Extruder**

Capacity -1.1 to 2.2 pounds/hour

## SMALL SCALE EXTRUSION CAPABILITIES AT NSRDEC:

- Laboratory scale DACA Spinline
  - Piston extruder
  - Two Godet rolls
  - Take up system
  - Used to process gram quantities of materials to make monofilament fibers
  
- Laboratory scale DACA Micro-compounder
  - Co-rotating twin screw extruder
  - Used to prepare small quantities of material containing additives for the DACA Spinline



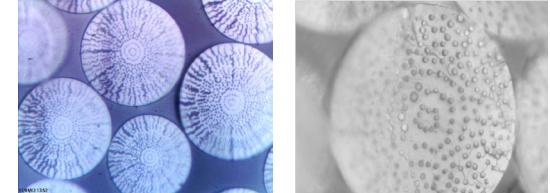
**Mono/Bi/Tri-Component Fiber Extruder**

Capacity -1 to 6 pounds/hour

## NOVEL EXTRUSION PROCESSING:

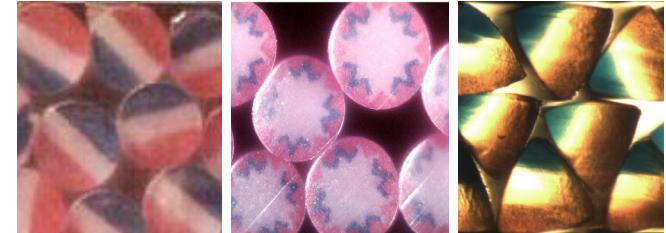
### Bi-Component Islands-In-The-Sea (INS) Fibers

- **Applications:** Production of melt processed nano- or micro-fibers



### Tri-Component Fibers

- **Applications:** Create new fiber shape or compatibilize two different polymers



### Bi/Tri-Component Sheath/Core Fiber

- **Applications:** Concentration of reactive components at the surface of the fiber for production of a conductive core/insulating sheath fiber
  - CB decontamination
  - Antimicrobials
  - Optical Communication
  - Sensors
  - Electronic textiles

