



HIGH PERFORMANCE FIBER FACILITY (HPFF) | WarSTAR

OBJECTIVE:

In collaboration with academia and industry partners the **High Performance Fiber Facility (HPFF)** will provide fiber technologies for use in Woven and non-woven textiles. These technologies will be used in high performance, dual-use applications such as environmental/ballistic/chemical-biological protection and electrotextiles.

CAPABILITIES:

NSRDEC has extensive fiber extrusion capabilities as well as state-of-the-art analytical capabilities such as Instron mechanical analysis, thermal analysis, transmission and scanning electron microscopy, nuclear magnetic resonance spectroscopy, liquid chromatography/mass spectrometry, and X-ray diffractometry.

This facility has purchased a one-of-a-kind bi/tri-component system. The capacity of this fiber extruder is 1-6 pounds/hour and it features three separate heating blocks to optimize extrusion of polymers with different melt profiles. Bi/tri-component spinning technology, which includes side-by-side, sheath/core, islands in the sea and segmented pie morphologies will lead to the development of lighter, reactive/ responsive fabrics that will make the wearer safer, more comfortable and higher performing. Bi/tri-component fibers can be used in other applications including, soft shelters, parachutes, vehicles and numerous household fabrics. Of specific interest to the HPFFCoE initiative are fibers that will have application in optical, electronic, high strength, flame resistant and reactive materials applications.

HPFFCOE R&D OPPORTUNITIES:

For HPFF R&D opportunities please visit the Natick Soldier RD&E Center website at nsrdec.natick.army.mil/business/. The "Doing Business with Us" section includes detailed information on Broad Agency Announcement (BAA) opportunities for "High Performance Bi/Tri-component Fibers," CRADAs, and Testing Agreements.

POINT OF CONTACT:

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