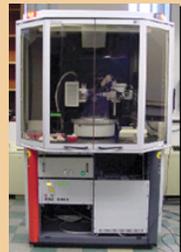


HIGH PERFORMANCE FIBER FACILITY EQUIPMENT:

Molecular / Atomic Structure



X-Ray Diffractometer



Nuclear Magnetic Resonance Spectrometer (NMR)



Optical & Mechanical Analysis

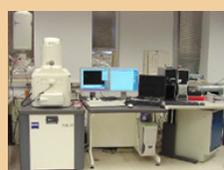


LEFT: Pulsed Laser



RIGHT: Instron®

Microscopy



SEM



CLOCKWISE FROM TOP: TEM, Atomic Force Microscopy, ESEM

HIGH PERFORMANCE FIBER FACILITY (HPFF)



US ARMY NSRDEC
Warfighter Science, Technology & Applied Research (WarSTAR) Directorate
Fibers & Material Physics Division
15 Kansas Street
Natick, MA 01760-5020
COMM: (508) 233-4577, DSN: 256-4577
FAX: 508-233-5521
Email: nati-amsrd-nsc-ss@conus.army.mil

ON THE WEB:
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MEDIA INQUIRIES:
(508) 233-6938





HIGH PERFORMANCE FIBER FACILITY (HPFF)

HIGH PERFORMANCE FIBER FACILITY:

The **High Performance Fiber Facility (HPFF)** will combine 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.



Yarn Twister

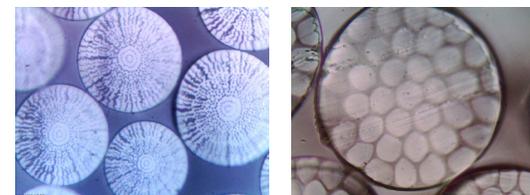
NOVEL BI/TRI-COMPONENT FIBER DEVELOPMENT AT NSRDEC:

- **Optical Fibers**
 - Optical Sensing and Communication
- **Electronic Fibers**
 - Conducting Core/Polymer Sheath Fibers for E-Textile Applications
- **High Strength Fibers**
 - Islands-in-the-Sea Nanofibers for Soft Armor or High Strength/Impact Composites
- **Flame Retardant Fibers**
 - New Polymers or Nanoparticle Additives for Improved FR
- **Reactive Fibers**
 - Tri-component Fibers for Smart Insulation

NOVEL EXTRUSION PROCESSING:

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

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



Side-By-Side 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



Homo/Bi/Tri-Component Fiber Extruder

Semi-Automated Loom

