



## W911NF-05-R-003

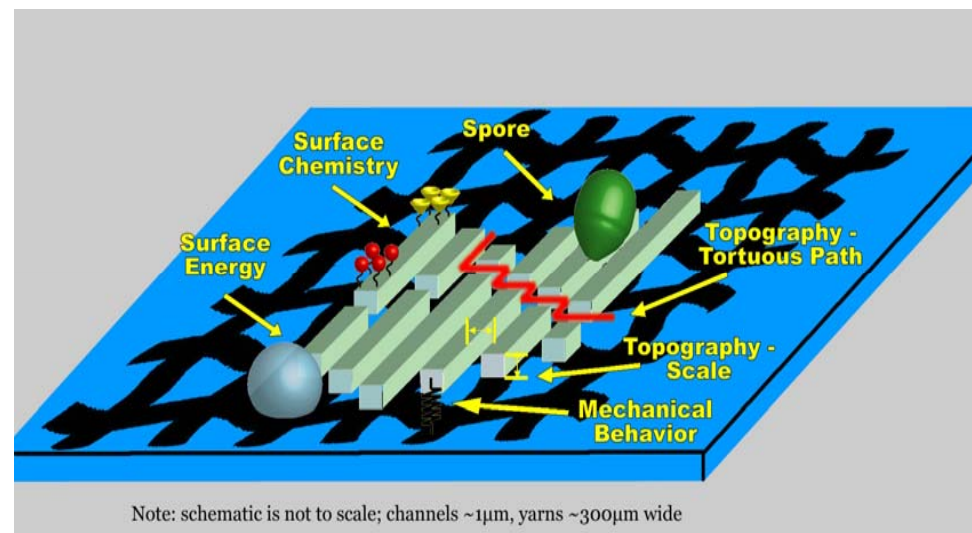
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*Chem/Bio-Selective Fabrics for Garments, Gloves and Masks ( Section II.B.a,b,d)*

**Objective:** Advanced, engineered fabric designs will provide superior protection for the wearer through a multi-tier barrier system that prevents penetration of contaminating vapors, aerosols while excluding biological and other particulates.

**Description of Effort:** Building on preliminary research completed for ONR Contract #N00014-02-1-0325, a multi-component fabric design will incorporate a novel 3-D outer surface, rendering the breathable fabric resistant to penetration by spores or other particulate contaminants. Further, the surface sheds particulates to reduce decontamination requirements. Interior layers of the composite actively trap and sorb fluid and vaporous contaminating species while providing for transport of moisture away from wearer.



**Benefit to warfighter:** Highly breathable fabric enhances comfort and operational efficiency of the warrior while providing superior protection from contaminating spores, other particulates, fluids and aerosols. Fabric surface is self-cleaning, actually shedding particulates, reducing cross-contamination of environment and decreasing risks during decontamination.

### **Challenges:**

- Optimizing surface geometry for broad spectrum challenges
- Interior active carbon fabric layer construction to maximize air permeability vs. fluid/aerosol trapping
- Laminating process

**Maturity of Technology:** 6.2 (TRL 2 initial; TRL 3 final)

**Capability Area:** Protection – clothing, masks, shelters

### **Major goals/milestones by fiscal year:**

- FY06 - Initial bio-sieve and ACFD layers and lamination technique selected
- FY07 -Bio-sieve design optimized; production techniques refined
- FY08 –Chem/bi-selective composite optimized; prototypes tested against CBW agents

### **Funding (\$K):**

FY06	FY07	FY08
\$550K	\$600K	\$600k

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