

SIMULATION OF C-CP FIBER-BASED HEPA FILTRATION

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ABSTRACT

The overall goal of this project is to develop high efficiency particulate air (HEPA) filter media, using conventional fiber spinning techniques, with lower pressure drop than current media through the use of shaped fibers. HEPA filters are widely used in both military and civilian applications.

This presentation will focus on modeling HEPA filtration, using a filter consisting of capillary-channel polymeric (C-CP) fibers. A variety of numerical tools are being used in this effort, including a finite element Stokes solver and Brownian dynamics simulation. Aspects of these techniques in relation to the problem at hand will be described, and simulation results will be presented.