



For Immediate Release

Tuesday, July 26, 2005

Contacts:

Sue Leenerman
Marketing Director
StrionAir
(303)-926-5693
sleenerman@strionair.com

John Parris Frantz
J.P.F. Assoc. Communications
(773)-871-2600
john@jpcomm.com

IAQ Study Reveals Commercial HVAC Air Purification Method Effectively Kills Anthrax, Mold, and Other Airborne Pathogens

Combination of mechanical air filtration, ionization, and electrostatics offers new hope of fighting bioterrorism, hospital spread infections, and other IAQ threats in hospitals, offices, and public buildings

BOULDER, CO — A new study reveals that HVAC equipment using a patented air purification method offers new hope in the fight against bioterrorism, hospital-spread infections, common mold, and other airborne pathogens that threaten indoor air quality (IAQ).

In tests conducted over a six-month period at the University of Colorado (CU) at Boulder's College of Engineering and Applied Science, the *Isolating the Effect of Active Electrical Fields on HVAC Filters* study exposed millions of anthrax-type spores and mold spores to a novel HVAC air purifying system that combines mechanical air filtration, ionization, and electrostatics.

The 24-hour test period resulted in the 97 percent and 99 percent inactivation of anthrax-type and mold spores, respectively. The kill rates observed by the study's researchers are consistent with exponential reductions of 99.9 percent and higher when spore forming bacteria and molds are exposed for longer periods, such as in a typical 24/7 HVAC field applications, according to Mark Hernandez, Ph.D., P.E., the study's principal investigator and an internationally recognized environmental engineering professor at CU.

“When compared to a static filter, a spore kill rate above 97 percent in just 24 hours is fantastic,” said Hernandez, who specializes in bioaerosol disinfection and received the prestigious National Science Foundation (NSF) Career Development Award in 1997 for his bioaerosol research. “Spores remain captured on the filter surface and are continually subjected to electric forces. They can’t reproduce and will die soon after capture.”

StrionAir Inc., Louisville, Colo., donated a small-scale version of its patented commercial HVAC filtration equipment that combines mechanical filtration, ionization and electrostatics to the CU study. Millions of *Bacillus subtilis* spores, a widely used bioaerosol surrogate because it’s a nonpathogenic relation to *Bacillus anthracis* (anthrax), and *Aspergillus versicolor* spores, a pathogenic surrogate for mold, were applied to the filter media and subjected to StrionAir’s patented system of electric fields. “Cells in a sporulated state have a thick protein coat and other physiological factors that make them highly resistant to heat, cold, ultraviolet (UV) radiation, desiccation, chemical disinfectants, and physical stress,” said Hernandez. “Consequently they’re much harder to kill than these same cells in their vegetative state. These were conservative tests because ‘garden’ variety environmental bacteria, whether pathogenic or not, are likely to be less resilient to the disinfection effects of the electric fields we saw applied here. Based on this test, it’s clear that this type of commercial filtration equipment will likely kill anthrax, mold, and the weaker communicable pathogens that cause diseases such as whooping cough, tuberculosis, and measles.”

Hernandez said the combination of mechanical filtration, ionization, and electrostatics, such as the StrionAir system, appears to offer distinct air purification advantages over other HVAC disinfection methods studied in past bioaerosol experiments, such as UV lights and HEPA filters. “Spores have evolved to survive in harsh environment and many are resistant to UV,” said Hernandez. “UV lights don’t remove or kill pathogens, they only prevent replication if the dose is high enough,” said Hernandez. “HEPA filters don’t actively kill microorganisms, plus the relatively high airflow resistance they create can significantly increase operational costs.”

About StrionAir: StrionAir Inc., Louisville, CO, manufactures high performance air filtration products for hospital, government, commercial, and other facilities throughout North America. StrionAir’s patented technology represents the commercialization of groundbreaking research performed at several labs in the area of enhancing filter performance through electrical forces. For more information contact StrionAir at (303) 664-1140 or visit www.strionair.com.