TECHNOLOGY APPLICATION AND DEMONSTRATION (TAD) AWARD

FUNDED BY THE U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA)
ADMINISTERED BY THE SYRACUSE CoE OFFICE FOR INDUSTRY COLLABORATION (OIC)

SYRACUSE CENTER OF EXCELLENCE
in ENVIRONMENTAL and ENERGY SYSTEMS
OFFICE FOR INDUSTRY COLLABORATION

PROJECT TITLE	Air Cleaning Technologies for Indoor Air Quality (ACT-IAQ): Growing Fresh and Clean Air
AWARD RECIPIENT	**Phytofilter Technologies, Inc.** 140 Route 9P Saratoga Springs, NY 12866 PHYTOFILTER TECHNOLOGIES, INC.
PROJECT DIRECTOR	Martin Mittelmark, President
GRANT AMOUNT AWARDED	$150,000
PROJECT TERM	2007 - 2008

COLLABORATING PARTNER

SYRACUSE UNIVERSITY
SUOS CULTORES SCIENTIA CORONAT
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PROJECT SUMMARY

Phytofilter Technologies, Inc. will manufacture a prototype device that will use microbes to actually digest VOCs and turn them into a useful food for plants. For the longest time VOCs have been a pollutant and a major cause of poor indoor quality air. Poor indoor quality air is now listed by the EPA as the fifth leading cause of illness in the country. For the longest time the method of dealing with poor indoor quality air has been ventilation. But Dr. B.C. Wolverton who was a senior scientist at NASA, worked to transform VOCs rather than simply to remove them. Hence a plant filter will be designed which actually absorbs VOCs and than allows the microbes which congregate around the root systems of certain plants to actually digest them. With the result that indoor air is purified and heating and cooling costs can be reduced by 20 to 30 percent.

Testing of the planter will take place in Syracuse University's BEESL Laboratory. Challenge gases will include a mixture of VOCs representative of those in a typical indoor environment, including formaldehyde, a carcinogen that is controlled in many indoor air quality-related certification programs. A simulation model will be developed to predict the long term performance of the device under a typical range of indoor environmental conditions. A whole building energy simulation will be conducted to determine the energy and cost savings that can be achieved using the air filtration device for an office building under various climate conditions. Typical HVAC system configurations will be analyzed to determine the best approach to integrate the new filtration device for both indoor air quality and humidity controls.

A pilot field demonstration will include incorporating the filter unit into the HVAC system of ICUBE that serves 30-32 office cubicles.

Laboratory performance results of the first prototype system will be completed by Sept. 15. Completion of an improved prototype system is expected by Jan. 15, 2008. Laboratory and pilot field performance test results will be completed by March 15, 2008, and the final report will be submitted by April 15, 2008.