

Press Release – FOR IMMEDIATE USE
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Local business owner, Doug Leuthold, was recognized in November at the annual R&D 100 Awards in Orlando, Florida, for his company's role in helping to develop one of the top 100 revolutionary and technologically significant products introduced over the past year.

Leuthold owns Advanced Fiber Technology (AFT) in Bucyrus, where the process of "converting today's wastepaper into tomorrow's products" has been going on since 2001. They manufacture cellulose fibers that are used in cellulose insulation, as well as a wide range of industrial applications.

"We've been a resource wise company since we began," said Leuthold, "long before the benefits of such environmentally friendly acts were recognized."

He added that AFT also leads the way in the design and implementation of dry state processing systems of wastepaper, so other manufacturers around the globe can help the environment in their day-to-day production of eco-friendly products.

"I often joke with others who ask what we do at AFT and say we grind paper," said Leuthold, "but the truth is we always strive to improve the products in the market and this time we have developed a product that's grabbed the interest of individuals and companies who are very instrumental in the energy conservation movement on a large scale."

Being chosen as a recipient of the R&D 100 Awards provides a mark of excellence known to industry, government and academia as proof that the product is one of the most innovative ideas of the year. Each of the 100 recipients is chosen by an independent judging panel and editors of R&D Magazine, and has been done this way since 1963.

"The R&D 100 Awards honor the latest technology developments that are designed to meet societal, scientific, or business challenges facing us today – and tomorrow," said Rita Peters, editorial director of R&D Magazine.

Leuthold said he was quite humbled by the honor, especially in light of the fact that some of his fellow recipients were responsible for 'some amazing products' such as the artificial retina that can be used to treat age-related macular degeneration (which is the leading cause of blindness in the US) and inherited retinal disorders.

"It's not often that an innovative development in a product like insulation comes along," said Leuthold. "We were able to combine thermal mass with thermal resistance, which allows a reduction in the homeowner's cooling cost and a shift in the utilities peak energy demand to later in the day."

“Receiving this award was exciting in itself, but we are more excited to begin moving forward and developing alliances with utilities to introduce this new product,” he added.

So how did all the development come about? According to Leuthold, he was approached by Oak Ridge National Laboratory (ORNL) of Oak Ridge, Tennessee, in 2003 because they needed someone to test materials for a plan that was developed to conserve energy usage and reduce the carbon imprint in the future.

“It was headed up by an ORNL task force and the thought was to use a PCM (Phase Change Material) as a method of shifting the peak energy curve so there is less demand on energy producing plants which sit idling until they are needed,” said Leuthold. “This means wasted resources while waiting in standby.”

AFT’s pilot line was used to test the list of selected materials which had the most potential for heat storage capabilities at the right temperatures. Those materials were then combined with cellulose insulation and tested at ORNL in small lab devices. Eventually, progress moved to testing in full-scale wall and attic simulators and then to demonstration structures.

“Once the thermal mass issues were resolved,” said Leuthold, “the next challenge was meeting the fire resistance criteria of the building codes.”

During the last few years of development, Microtek Laboratories of Dayton, Ohio, worked with AFT on solving this challenge by developing an ignition-resistant microencapsulation technology.

This is the first-ever organic fire-resistive PCM that can be added to buildings and still meet federal guidelines. This new material is composed of fatty-acid esters from sustainable plant and animal fats. So not only is it eco-friendly in comparison to petroleum-based PCMs, its safety features meet strenuous fire codes for buildings.

Whittled down to basics, this PCM is an active thermal component that stores heat during peak cooling hours and sheds heat during off hours, making it a smart insulation. Buildings, whether new or old, that are insulated with this material will be able to operate with lower cooling loads and increased comfort. This breakthrough will help builders progress toward making buildings that have near “zero energy” use.

When asked what’s next, Leuthold smiled and said, “We’ve got some other products in the development pipeline and hope to announce our recycled fibers as a concrete additive in 2010.”