

Bright IDEA for Media Makers

BY ADRIAN WILSON, INTERNATIONAL CORRESPONDENT



Pictured receiving their Innovation Award for NanoWave filter media are Angelika Mayman and Eric Westgate of Hollingsworth & Vose, from Dave Rousse, INDA President, (left) and Rod Zilenziger of Nonwovens Industry (right).

INDA'S 2013 nonwovens show was a platform for advanced filtration concepts across a range of industries. Filter manufacturer Donaldson, headquartered in Minneapolis, Minn., has recently published statistics on the global filtration market which it estimates now has an annual value of \$50 billion.

The market for engine protection within this – in which Donaldson has a leading position – is certainly considerable and worth an annual \$8 billion. But it is eclipsed by that of water filtration, which is worth \$10 billion in 2013, and likely to become very considerable indeed in the coming years. There are many nonwoven

media developments currently underway in this area.

Ahlstrom, for example has just entered into a collaboration agreement with Dow Water & Process Solutions (DW&PS), a business unit of Dow Chemical, to use Disruptor nanoalumina filtration technology in drinking water applications.

DW&PS will incorporate Disruptor filter media into a new set of drinking water purification products, which provide excellent pathogen rejection while operating at high flow and low pressure.

“One of the key goals in our product development is to create products that purify air and liquids in a sustainable way,” said Fulvio Capussotti,

executive vice president at Ahlstrom Advanced Filtration.

Ahlstrom Disruptor virtually removes all microorganisms that can cause sickness. Its combination of large pore size and very high electrical attraction potential enable the efficient removal of virus-sized particles at a high flow rate at very low pressure. It can be utilized in a number of drinking water applications, such as under-the-sink purification, tap water filters and water pitcher filters. It can also be used in areas with no electricity, requires no use of chemicals and does not generate wastewater.

“Global trends such as population growth and urbanization put pressure



on already strained water sources,” added Snehal Desai, global business director for DW&PS. “We see a real need for new innovations to expand access to clean, safe drinking water in an easy, effective and sustainable way. Our collaboration with Ahlstrom extends our product offering to people who need effective water treatment but may not have access to pumps or electricity.”

AUTOMOTIVE POTENTIAL

Separately, the automotive air filtration market is worth around a further \$3 billion according to Donaldson. At this year’s IDEA non-wovens show in Miami in June, Dave Rousse, president of INDA – the Association of the Nonwoven Fabrics industry based in Cary, North Carolina, which organizes the IDEA shows – had some interesting observa-

tions to make about the growing potential for engineered fabrics in filter media for the automotive field.

In the U.S., double-digit sales during 2012 were reported by Chrysler, General Motors and Ford, coupled with even stronger North American growth by Toyota and Honda. This follows a resurgence in the USA in 2011, with growth of 11.5% achieved in the production of



Cyphrex (large photo) successfully combines polyester and cellulose microfibers.

The Eastman Cyphrex team in Miami (above, left to right), Eastman's CTO Greg Nelson, Technology Director Mark Clark and Vice President of Innovation, Marketing and Sales Tim Dell.

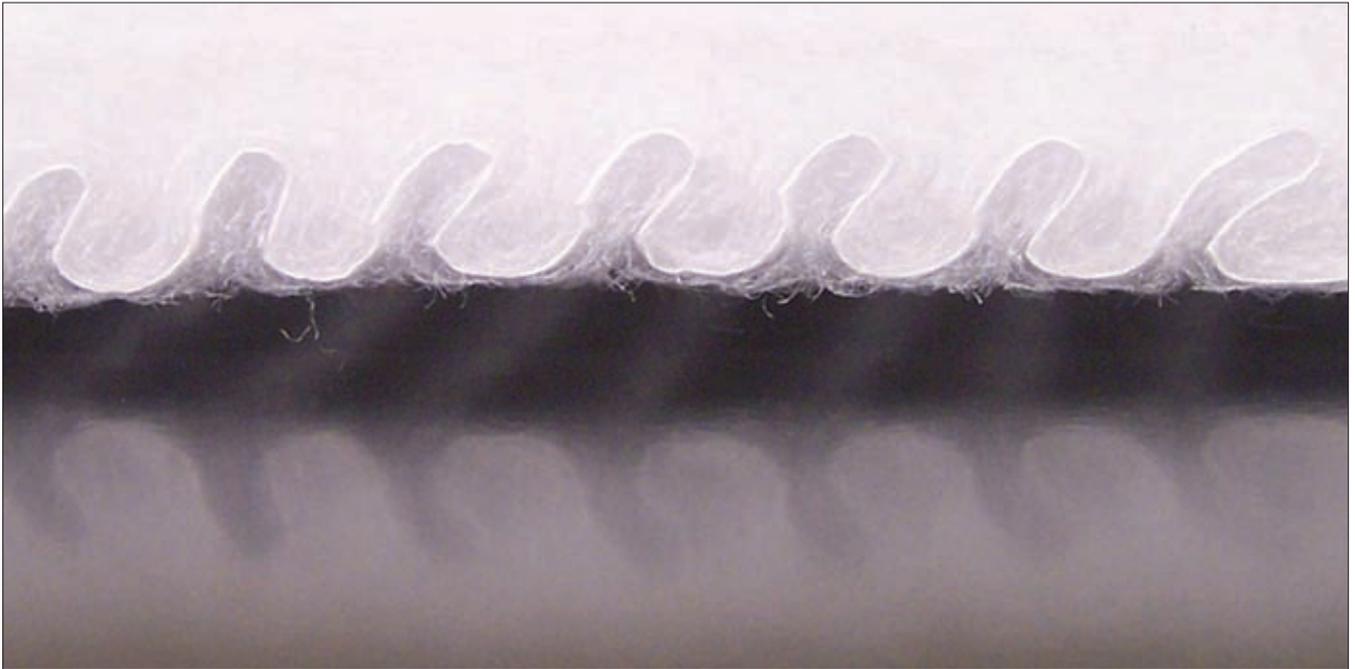
over 8.6 million vehicles, according to OICA – Organisation Internationale des Constructeurs d'Automobiles – the international organization of motor vehicles. In 2012, the U.S. produced 10.3 million cars and light vehicles, having previously reached a record in 2007 of 15 million such vehicles produced.

“The automotive sector is one of the positive drivers of the North

American economy right now, along with housing,” said Rousse. “Both sectors were severely impacted by the downturn, so their year-on-year improvements are steeper than other sectors of the economy, which are more tepid. We are also seeing a significant new interest in manufacturing overall in the U.S. due to the dramatic impact of low energy costs. The fracking of North American shale to get

both oil and natural gas has been a game changer. Energy costs in North America now are about half of Europe, so even with labor costs at parity, manufacturing here is going to be on the increase for years. And our members will benefit.”

He added that another significant development was the World Health Organization declaring diesel fumes carcinogenic to human health in June



The structure of H&V's award-winning NanoWave greatly enhances dust-holding capacity.

last year.

"This is something all of the regulatory bodies worldwide will have to react to, sooner, rather than later," said Mr. Rousse. "It's a colossal opportunity for nonwoven filter media suppliers as far as we can see, because if high performance is mandated, then the high price for products will be there too."

CAPTIMAX WITH CYPHREX

An interesting new product in this area is Ahlstrom's Captimax media for fuel filters in passenger and commercial heavy-duty vehicles and off-road machinery.

Also being evaluated for use in other applications such as hydraulic and fuel water separation, Captimax is based on Eastman's new Cyphrex polyester and cellulose microfibers.

"Eastman Cyphrex microfibers provide the potential for a unique, game-changing fiber tool kit," said Eastman Cyphrex Technology Director Mark Clark. "They offer tunable properties in respect of the size, shape and material that provide wet-laid nonwoven producers with competitive advantages that aren't currently available. They have demonstrated nearly drop-in compatibility with

existing wet-laid nonwoven processes and potential initial uses are in air, water or fuel filtration, specialty papers and battery separators."

The first result from Ahlstrom is a filter media that allows manufacturers to obtain optimum micron efficiency ratings and dust holding capacity without making compromises.

Captimax provides a balance of excellent small-particle retention and the potential for longer product life. The media also lets fuel filtration system suppliers maintain existing capacity levels but reduce the product size. In addition, it can allow for increased efficiency with better options to filter fine particles to protect fuel injectors in vehicles and machines.

"Captimax media offers both high efficiency and high capacity," said Gary Blevins, vice president of marketing and commercial for Ahlstrom's Transportation Filtration business. "We're giving our customers the ability to make filters to the specifications they need, allowing them to develop products outside the standard constraints of the media."

CHINA GROWTH

Freudenberg is another key player in the nonwoven filter media market

and has just announced a new \$5.8 million production site in Chengdu, Sichuan Province, China, in response to the growing demand for automotive filters in that region, with its partner Japan Vilene.

"Together we will deliver state-of-the-art filtration technology to the growing automotive industry in Chengdu with companies like Volkswagen and Geely Volvo," said Dr. Jörg Sievert, member of the management board of Freudenberg Filtration Technologies, which already has plants in Changchun and Suzhou and first started production in China in 1998.

Sixty employees will work at the new site – which will produce both engine air intake filters and micronAir cabin air filters – by the end of 2013. By establishing the new production site in Xindu, Freudenberg is scaling up domestic production capacity substantially.

Major car manufacturers including First Automotive Works Volkswagen and Geely Volvo have sited their manufacturing plants in the Chengdu area and vehicle production in the region is expected to increase substantially, from 1.8 million units in 2011 to 3 million units in 2015.

NANOWAVE RECOGNITION

In the field of HVAC – a global market Donaldson estimates is now worth an annual \$5 billion – Hollingsworth & Vose received INDA's Innovation Award in the Roll-Goods category for its NanoWave filter media at IDEA.

NanoWave is an extended surface area, multi-layer filtration media for HVAC applications. Using nano and coarse fiber layers, it is said to deliver 2.4 times the surface area of normal flat sheet media. The waved nanofiber layer allows for maximum mechanical efficiency with very low resistance, while more than doubling dust-holding capacity compared to standard synthetic media. Described as a 'green' product, NanoWave is composed of a single polymer and can be incinerated to regain energy. NanoWave pocket filters achieve the highest filtration performance and deliver superior air quality. Other uses for NanoWave include residential filtration, liquid filtration and gas turbine intake air filtration.

"We are especially pleased to receive the IDEA13 Achievement Award because the industry selected NanoWave after a period of online voting," said Mike Clark, H&V's HESF division president. "H&V was founded on a patent and we are honored to be recognized by our peers for our most recent innovation."

SAWASCREEN

Another Innovation Award winner was Germany's Sandler, for its Bio Textile biowipes substrate. Specifically for the filtration market, Sandler provides media for classes G3 to E11, with synthetic sawascreen pocket filter media comprising fibers of less than 1µm to achieve high efficiencies and high dust holding capacity.

The fine fibers create a large filtration surface, boosting mechanical efficiency that does not decrease, even after discharge.

The progressively structured filter media feature a low average pressure drop, reducing energy consumption during operation of the filtration plant.

For small installation spaces, pleatable Sandler sawascreen pleat filter media feature a uniform, length-wise oriented fiber structure for high mechanical stability and they can be easily manufactured with all common pleating processes. The stability of the pleats is unaffected by pressure or other mechanical influences, as well as moisture.

RECORD BREAKER

IDEA13 was held June 22-25, 2013, in Miami Beach, Florida, U.S., featuring 483 exhibiting companies and drawing close to 7,000 attendees from 72 countries.

"IDEA13 was a record-breaking event and one of the most successful IDEA shows ever," said Dave Rousse. "The continued strong participation of international exhibitors and attendees is proof of the show's importance within the international nonwovens/engineered fabrics community."

In addition to attendees and exhibitors on the show floor, many more were doing business at nearby hotels and at over 50 on-site meeting rooms utilized by the leading companies for their business discussions. The well-attended conference sessions focused on regional global markets, trends and forecasts with an insightful look into the engineered fabrics markets in North America, South America, Europe, Asia-Pacific, China and India.

The IDEA Achievement Awards were presented to the best new products during the last three years, in the following five categories: Equipment, Raw Materials, Roll Goods, Short-Life End Product and Long-Life End Product.

The five winners were:

- Machinery/Equipment: ITW Dynatec – Surge adhesive applicator
- Raw Materials: Sandler AG – Bio Textile Bio-wipes Substrate
- Roll Goods: Hollingsworth & Vose – NanoWave filtration media
- Converted Product: ITW Dymon – Raptor Safe-T Wipe (substance activated fast evaluation technology)



INDA's outgoing President Rory Holmes received a Lifetime Achievement Award from the organization during the show.

- Long-Life Converted Product – Hunter Douglas: DuoTone Honeycomb window shade

In addition, the IDEA13 Entrepreneur Achievement Award was presented to Suominen Nonwovens and the Lifetime Achievement Award was presented to Rory Holmes, past President of INDA.

INDA will stage its Filtration international conference and exposition at Navy Pier in Chicago from November 12-14, 2013. 



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