More companies, more papers and more visitor footfall proved that Filtech is now well established as the comprehensive platform for the filtration industry in Europe – and growing all the time.

By Adrian Wilson, Correspondent

Over half a century since its debut – (see Into the unknown...page 20) – Filtech continues to go from strength to strength as a truly international conference and exhibition for the global filtration industry.

This year, the conference comprised 174 papers presented by speakers coming from 23 countries, while around 40 new companies boosted exhibitors to a record 355 in Cologne, Germany, from October 11-13.

**PLEATING AND NANOFIBERS**

Media manufacturers continue to develop new ways of making filters even more effective and the use of advanced pleating methods and nanofiber layers and coatings are two notable ongoing trends.

Ahlstrom, for example, has developed its NanoPulse nanofiber-coated cellulose and synthetic media for re-
High quality metal mesh and filter supplier

Tiancheng company has international advanced wire mesh weaving technology and filter processing & detection means, ISO9001 Quality Management System ensure that provide you with high-quality products. All of our metal woven mesh and filter can be customized according to customer's demand.

Product Standard:
ISO9044-2000,ISO4763-1
Material: 304,304L,316, 316L,2507 copper, etc.
Application: fluid filtration

Stainless steel wire mesh
Stainless steel special mesh
Copper wire mesh

Polyester Melt Filter
Hydraulic Oil Filter
Air Filter

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verse-pulse gas turbine and industrial air applications.

Designed to remove high amounts of sub-micron sized contaminants, the nanofiber layer is securely adhered on the upstream side of the media to assure optimal dust cake release during reverse pulse cleaning. A deep groove with good shape retention helps to separate the media’s pleats, with smooth pleating assured even on rotor machines, as a result of the strong and robust engineered base fabric.

**NXTGEN**

A new name in nanofibers is Nxtgen, of Claremore, Oklahoma, which formed three years ago to meet a gap in the market and is now securing strategic partnerships with organizations in a variety of industries.

“We are first and foremost a high volume nanofiber manufacturer,” explained Nxtgen General Manager, Andy McDowell. “We saw the mismatch between the production rates industries would need and what was available, which led us to design and develop our own process for nanofiber production which we call HYPR – high yield production rate – spinning. With our method there is virtually zero polymer waste, which means no down time for machine spinning. We are producing at rates of up to 100 meters a minute, in excess of ten times more than other commercial nanofiber methods on the market, while still producing true nanofibers.”

Most applications, he added, require specialty polymer blends and fiber technologies.

“So we felt it necessary to design a system that could be rapidly tailored for unique products. We produce bi-component nanofibers, gradient density and diameter nanofiber matrixes, multi-polymer nanofiber composites and even colored nanofibers. Our system makes this very easy and switching between products literally takes only a few minutes. We can produce nanofibers from practically any polymer and adhere to a vast array of carrier media where necessary.”

**20NM MEMBRANE**

Porex, based in Fairburn, Georgia, introduced its tubular 20nm Ultrafilter for demanding applications such as wafer grinding, where fine abrasive silicon particles and colloidal silica gel particles range from 20-50nm and are very sharp, with the ability to quickly damage many types of membrane.

“The 20nm membranes incorporate the same robust bond to the substrate as standard Porex tubular membrane filters, which are engineered for high strength and durability,” said Director of Global Business Development, Doug Frick. “This makes them the ideal choice for wafer grinding applications.”

**RPD HIFLO-S**

An entirely new type of 3D woven metal media has been developed by Haver & Boecker, based in Oelde, Germany, with the assistance of the Math2Market GeoDict simulation system.

“The traditional way of designing and testing filter prototypes is costly and
time consuming,” said Andreas Wiegman of Math2Market, which is based in Kaiserslauten, Germany. “This is due to the complex interplay of the material properties of the filter media, the arrangement of fibers in the medium, the physical and chemical properties of the fluid being filtered and the characteristics of the particles in the fluid. GeoDict is a modular package developed for the simulation of filtration processes and its modules help gain insights into the behavior of existing filters, and beyond that, to develop new filter media.”

Speaking at the Filtech Conference, Haver & Boecker’s Vice President of Sales, Friedrich Edelmeier, said that the company’s RPD Hiflo-S material could achieve twice the throughput volume flow for a given pore size than traditionally woven structures as a result of its 3D structure.

**SEPARATING THE WIRES**

“Using the GeoDict simulation tool to predict performance we were able to optimize the 3D structure by separating the weft wires from one another so that the number of pores is doubled over a given surface area, but the pore size remains the same,” he said. “In addition, the pore sizes can be calibrated from between five and forty microns, which means that we can now carry out a se-
quence of orders in a single production run. In the past, these had to be made separately."

In addition, the flow conditions are optimized and turbulence around the filter cloth is effectively avoided. The new filter cloth can be manufactured from standard diameter wires with a positive effect on cost. The company can now also weave special materials and is able to offer a corrosion and temperature-resistant filter cloth with pore sizes below 40 μm for the first time.

The depth structure of RPD HIFLO-S offers a high separation effect without rapid blinding. Dirt holding capacity and cleaning capability have proven to be excellent.

ENAIRSAVE
Efficiency and dust holding capacity are no longer the most important properties in air filtration, said Germany’s Sandler. Energy efficiency during operation of the filter plant is gaining in importance and influencing testing standards and as a result, filter media are expected to contribute to lower energy consumption.

Sandler’s new synthetic enAIRsave media combines performance and reduced energy consumption and consists of three filter layers to provide optimum dust separation, not just in the fine fiber layer, but also across the entire width of the media. The particles are primarily deposited in the coarse meltblown layer as well as the pre-filter layer. As a result, air can still flow through the filter at a relatively low pressure and, consequently, with reduced energy consumption.

Pocket filters made from sawascreen enAIRsave are self-supporting even when loaded with dust and the pockets do not sag when the air stream is cut off.

FOR TIGHT SPACES
Increasingly, components containing nonwoven filter media such as air cleaners and air intake systems are being required to fit into reduced spaces in commercial vehicles. The compact design of the vehicles, additional components for comfort and exhaust gas after-treatment systems are all putting further limits on available installation space.

In response to such challenges, Mann+Hummel, headquartered in Ludwigsburg, Germany, has developed two new flexible air cleaner concepts. With its oval-conical shape, Exalife air cleaners are ideal for narrow and flat installation behind the driver’s cabin, for example, or on top of the engine under a long hood, as is typical in US trucks. These filters also excel due to significantly lower pressure loss than air cleaners with axial-flow used for similar applications. One big advantage here is the reliable radial sealing concept familiar from round filters. Mann+Hummel already has production capabilities for these filters in place.
With the VarioPleat air cleaner, meanwhile, pleat heights of up to 300mm can be achieved with the company’s proprietary nonwoven converting manufacturing technology. This allows the filter element to be optimally adapted to the available installation space and interfering contours, such as the wheel arch.

**PAINLESS PTFE COATING**

Finishing machinery specialist Monforts has recently delivered a number of its latest Montex 8500TT stenters to European filter media manufacturers. “This is the first system on which it is possible to thermally set PTFE fabrics without oil greasing in the stenter chain and in the width adjustment,” said Jürgen Hanel, the company’s head of technical textiles. “This protects workers and the environment from harmful oil vapors and keeps the filter material clean. The guarantee of reaching 320°C with a very low temperature tolerance and with an excellent housing insulation is a major advantage, so that we never reach an outside temperature over 60°C at any position.” In ad-
dition, the Monforts’ foam padder is able to run two different foams at each side of the material. “For nonwoven applications this is recognized as a cost effective applicator while retaining the porosity of the materials being coated,” added Area Sales Manager, Thomas Päffgen. “With the foam solution our customers save drying costs and can run at much higher production speeds compared with a liquid padder. This applicator can, after modification, also be used for thick felts and woven materials.”

The Montex 8500TT stenter is ideal for the preparation of filter materials offering a stenter frame for the drying and finishing of both woven and nonwoven, with high stretching devices in both length and weft direction up to 10,000N and at high operating temperatures up to 320°C.

ITALIAN PRESENCE

There was also a strong showing at Filtech 2016 from Italian companies, including Grezzana-based Alteco,
which specializes in the production of stainless steel filter housings and installations for the food and beverage, industrial, chemical and pharmaceutical sectors.

With annual sales of around €5.4 million, Alteco achieves 25% of its turnover in Italy and 70% in the rest of Europe.

The family-owned company has been processing steel since 1955 and today its main customers are cartridge and filtration unit manufacturers and dealers, in addition to installation and machinery manufacturers.

“We can comply with any customer request and have the flexibility to meet customized requests, in addition to our ready-to-use and tailor-made products,” said director Matteo Albrigi. “All of our processes are based on lean production principles.”

SIFA Technology, based in Sassoferrato, meanwhile specializes in the supply of a range of materials and provides logistics and assistance to air and liquid filter manufacturers, meeting a real need in the market.

“We focus our attention exclusively on the air and liquid filter manufacturers and avoid any contact with the final product users in order to guarantee the highest standards,” explained company chief Fabrizio Perini. “We are experts...