CETI: WORKING AT THE CUTTING EDGE

Major, definitive research into nonwoven raw materials, applications and production models and methods are all in a day's work for the European Center for Innovative Textiles (CETI) in France. The latest ANDRITZ state-of-the-art air-through bonding nonwoven technology is right at the heart of the center's globally renowned research.

"We work in a challenging environment," says Pascal Denizart, CEO of CETI. "We have to get into the heads of the final users – find out about their needs, wants, and desires – what they'll be looking at next in terms of touch, feel, and raw material preferences. We have to get ahead of the curve, predict the trends, and create the products."

Denizart was talking to SPECTRUM on a visit to CETI's spectacular and futuristic research and prototyping center dedicated to nonwoven and new textile applications. The center is located in Tourcoing and Roubaix near Lille in northern France and was previously known as "The City of a Thousand Chimneys," due to the huge number of textile mills and factories once located here.

"R&D on raw materials, the search for new and more sustainable fibers, and prototyping new and better production methods for our clients and customers are all in our DNA here at CETI. Being sited in the European Metropole of Lille with its history steeped in textiles and fabrics reinforces our mission to be at the forefront of all the applications we are working on," adds Denizart.

A MAJOR TECHNOLOGY PARTNER

ANDRITZ has been a major technology partner with CETI since it was launched in 2012, supplying the latest nonwoven technologies from its own sites in France and Germany, including equipment for needlepunch, spunlace, carding, and air-through bonding. One of the latest additions to CETI's nonwovens production arsenal is a flat oven supplied by ANDRITZ Perfojet, Montbonnot, France. The flat oven is perfect for producing the latest trend in nonwovens – lightweight carded webs that work with bi-component technology. This means that CETI and its clients now have the most up-to-date equipment and technology to produce the very latest in high-end nonwovens for the hygiene market.

Frederic Noelle, Division Head of Innovation and IP, ANDRITZ Nonwoven, says, "Like CETI, we at ANDRITZ working in the nonwovens area are always looking out for the next trend, the next customer preferences and, of course, working on ways to best produce those preferred products.

"We had been noticing more and more that air-through-bonded nonwoven products were growing in demand, particularly in the Far East, and particularly in the premium hygiene sector; however, there was no complete pilot line in Europe. We discussed our findings on the ground with CETI, where we had already installed an Omega dryer and oven in-line with a nonwoven card as well as a spunlace unit. Very soon it was mutually decided that air-through-bonded nonwovens were an important trend that demanded an R&D solution at the research facilities in the European Metropole of Lille.

"It took almost exactly one year from the final decision to the delivery, installation, and commissioning of the flat oven at the end of 2017. This was a challenge for a number of reasons, but mostly because of space constraints. Also, because this was a pilot line built with versatility in mind, the 12 meters long and 12 tons in weight flat oven had to be movable for when there were trials of nonwovens not using this oven. Essentially, CETI needed a completely plug and play solution to slide in the oven when needed for trials, and then unplug and slide out when not needed."

A LOT OF NEW OPPORTUNITIES

The oven itself has been designed to cope with speeds much higher than normal capacity to make sure that it's futureproof in terms of increased

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CEO, CETI

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Division Head of Innovation and IP
ANDRITZ Nonwoven

SIMON FREMEAUX
R&D Production Manager, CETI

"No other company could provide what ANDRITZ delivered."

ANDRITZ air-through-bonding line at the CETI facilities

"With this new technology, we can apply all sorts of new features to nonwovens..."

MÉLANIE MONCEAUX
R&D Engineer and Senior Project Manager, CETI

running speeds, it is also able to run in both directions to enable different production technologies to be inserted and applied at either end. The oven can be unplugged and moved very quickly with three people and uses air-cushioned feet that are attached to the frame of the oven.

The flat oven is also prepared for the complete monitoring of the air-through-bonding process through the ANDRITZ IIoT solution Metris.

The completed project provides CETI and its customers an R&D platform with both flat and Omega ovens for the prototyping of the fast growing trends in air-through-bonding nonwovens. This unique line covers most of the customer expectations and market needs.

So, what new opportunities has the new flat oven technology brought to CETI and its clients? Mélanie Monceaux, R&D Engineer and Senior Project Manager at CETI says, "With this new technology, we can apply all sorts of new features to nonwovens; for instance, for hygiene products we can increase bulk by blending other fibers into the mix. We are also working on other solutions when it comes to sustainability, for instance, tea bags, where we can eliminate the binders, and therefore make the products more biodegradable.

"The flat oven has also been generating a lot of interest among our customers who have a lot of their own ideas when it comes to testing new products using the air-through-bonded nonwoven process, particularly when it comes to using more sustainable and renewable raw materials."

"Sustainable raw material and biodegradable end products are becoming increasingly important for us at ANDRITZ when we are designing technology for nonwovens," adds. Noelle, "The air-through-bonding process can also use natural fibers from wood and, as the process replaces chemical bonding, the end result can be a much more sustainable nonwoven product."

In terms of production, CETI is clearly delighted with the technology ANDRITZ has supplied since its inception in 2012, including the latest in the shape of the flat oven, which has enhanced the ability within CETI to really get things done when it comes to R&D. Simon Fremeaux, CETI's R&D Production Manager says, "When CETI was founded, we knew that there were very few companies in the world that could be considered leaders in nonwoven technology; ANDRITZ was one of those, and we have worked together well since the beginning. When it came to the flat oven, the prerequisite was to have a machine that was totally flexible, that could be moved, and stored, and then implemented again with speed when needed.

"No other company could provide what ANDRITZ delivered. Added to the size, speed, and versatility of plug and play, ANDRITZ also added the feature that it could run in both directions. We truly have a customized piece of equipment that has added a lot of extra possibilities to CETI's R&D offerings."

FAST PROTOTYPING IS THE KEY

CETI is literally at the cutting edge of innovation for products that are going to be used by a lot of us as well as generations to come in the areas of hygiene, automotive, and textile applications. This carries huge responsibilities as the demands of the end user are increasing. CEO Denizart says, "The consumer is becoming much more demanding, and is the driving force behind design, quality, price, and sustainability. More and more the well-informed consumer wants to know exactly what the product is made of and where it is coming from.

"At CETI, our core business is building, working on new materials, and prototyping products that brands can have faith in. Our strength is to take an ingenious invention or idea from our clients and bring it through to prototype as fast as possible. This is where our partnership with ANDRITZ is key for us; their experts really listen to what we want, as well as share their own knowledge. They then apply our needs and their own expertise, and the results speak for themselves.

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CETI building in Tourcoing