

In Our Opinion - Fluff and Specialty Pulps in The Past, Present and Future

Fred Barlow, BISS

and Donald C. Young, Marketing Technology Service

This presentation will review fluff and specialty pulp contributions to absorbent materials and how these have changed and will further change. This background information is a logical starter for a future roundtable that would include experts from all facets of the field to address the opportunities and challenges of this key raw material.

100 Times Higher PUR Coating Speeds for Nonwovens With Near Infrared

Walter Becker, Niederrhein University of Applied Sciences

The coating process is accompanied by a heat treatment process, e.g. curing. The overall coating process time is estimated on the basis of the heat treatment time. Near-infrared (NIR) radiation heat treatment makes it possible to transfer high amounts of energy into the coated bulk without inducing the formation of a dry film on the surface immediately. The surface is then smooth at the end of the process. The heat treatment time is shortened. The influence of some of the parameters of the NIR radiation treatment process will be discussed.

Nanononwovens for Hygiene Application

Thomas Broch-Nielsen, Fibertex A/S

Nanotechnology is expected to create a basis for a revolution in new materials and material properties for nonwovens. This presentation provides a general introduction with special emphasis on work performed for hygiene applications. Two topics will be described in detail in our presentation:

1. Superhydrophobicity (water shedding), and superhydrophobic nonwovens.
2. Fragrance release & odor control on nonwovens using cyclodextrin molecules.

The surface of many plant leaves are inherently superhydrophobic, due to a combination of certain chemical & topographical features in the micro- and nano-scales. This phenomenon is commonly referred to as the "lotus effect" and has the benefit of certain self-cleaning abilities. Hydrophobicity and inherent self-cleaning ability are desired features in the nonwovens industry for fabrics used in clothes, medical applications, hygiene etc. It is also possible to use cyclodextrin molecules to trap pleasant smelling fragrances, for later controlled release, and for trapping molecules with undesired odors. The possibility for fragrance release & odor control is desired in hygiene products such as baby diapers, incontinence products, sanitary napkins, wipes etc. The potential opportunities arising from nanononwovens, as well as their potential commercial uses in hygiene, medical applications and other interesting areas is described.

Roll Handling: Bottleneck or Opportunity?

Paolo Dini, A. Celli S.p.A.

Everybody in the Industry is making reels and every-

body needs to handle, wrap, label and pack them quickly and effectively. Often this final part of the production cycle represents a bottleneck for the whole production line with issues related to productivity, quality, and unfortunately, wasted reels. Why not take the chance to improve it, integrate it and fully automate the cycle and the data transfer upstream? Here we examine a new approach to transform a bottleneck into an opportunity of profit and efficiency.

Elastic Bico Bonding Fibers

Prashant Desai, FiberVisions Incorporated

Seiichi Noda, ES FiberVisions Aps

There is great interest in increasing the extensibility of nonwoven fabrics. Recent studies on the mechanics of nonwovens have resulted in much greater insight into the deformation and failure mechanisms. The importance of fiber reorientation as a factor in dictating extensibility is clearly recognized. This phenomenon is consistent with the relative MD and CD elongations of carded, thermal bond and spunbond nonwoven fabrics. This understanding suggests that fabric extensibility can be increased through increasing the potential for fiber reorientation. One approach is to enable three dimensional crimp that increases contour length of the fibers between junction points. An example of this approach, using the recently introduced EP-HS elastic fiber from ES FiberVisions, is presented in this paper.

Resin Bonded Nonwovens in Today's Hygiene Market

Sorin Crainic, Amantea Nonwovens, LLC

Although it had disappeared from diapers, resin bond technology was introduced again 10 years ago as an acquisition layer. Recent developments have proven that it's still young and has many years of life ahead. This has permitted the creation of the first Minority Owned Nonwovens Manufacturer, Amantea Nonwovens. The model, developed with P&G's active support, has enabled the creation of a manufacturing start-up.

Biodegradable Low Cost Superabsorbents for Diapers are on the Way!

David G. Crowther, Professional Engineering Solutions and Zvika Meiri, Exotech Bio Solutions

Exotech Bio Solutions - EBS, an Israeli biotech startup company, has developed a novel superabsorbent polymer (SAP) that is equivalent in performance to conventional polyacrylic acid (PAA) SAPs, is inexpensive to produce, and does not suffer from the shortages/high costs associated with acrylic acid SAPs.

The new product, ExoSAP, is based on EBS new technology using a new type of composite material based on the interaction of a natural polymer and a synthetic polymer having a three-dimensional configuration with intermolecular covalent bonds. ExoSAP biodegrades rapidly in the waste stream or in landfills – unlike conventional PAA superabsorbents, which can take hundreds of years to decompose completely. Tests have shown that 25% of the EBS superab-

sorbent biodegraded within 8 weeks in landfills. Exotech has completed preliminary research on this superabsorbent material made from very common raw materials: gelatin and styrene. With the help of an Israeli government grant, Exotech has set up pilot facilities in Qiryat Gat, Israel.

Exotech has produced pilot quantities of their new superabsorbent product and has completed several series of absorbency tests, including one trial of the product in diapers. These tests show absorbency and leakage results comparable to conventional PAA superabsorbent products. Exotech is currently seeking additional funding to build a manufacturing facility to produce their unique SAP.

New Approach to Odor and pH Control in Personal Care

Jacek K. Dutkiewicz, Buckeye Technologies Inc.

A new approach to odor and pH control in medical and hygiene care applications relies on treating absorbent systems or their components with certain inhibitors of enzymes responsible for generation of malodorous substances. For instance, cellulose fiber and airlaid nonwovens were found to be particularly convenient carriers for some chemicals which can modify the structure of an enzyme and/or block its active site. This concept was effectively used to slow down the fermentation of urea in urine present in personal hygiene materials and suppress the emission of ammonia. An additional benefit of this technology was control of the pH, maintaining it at a slightly acidic level. The new technology proved to be effective also in suppressing odors associated with menstrual fluid and sweat.

Developments with Olefin Fibers and Nonwoven Fabric Technology - A Tutorial

Edward J. Engle, Engle Consulting

This presentation is a review of fiber and fabric converting processes and materials including olefin polymers, additives and finishes with implications for the next generation product designs. Emphasis is on monocomponent fiber and nonwovens with softness, strength, elongation and liquid transport (or barrier) characteristics. The advances in polymer chemistry, additive systems and surface finishes have brought important improvements which will be discussed in the context of how they affect finished fabrics.

Developing Markets - The Growth Engine for Hygiene Products

Pricie Hanna, John R. Starr Inc.

The hygiene market potential in the key developing and emerging markets of the world is huge, but it is challenging for industry participants to anticipate what their business opportunities are in these markets. This presentation will provide updated perspective on hygiene product consumption and growth trends in these markets. The demographic and economic factors driving this growth will be reviewed. It will include the demand outlook for key raw materials generated by end product volume growth, combined with trends in hygiene product design and material composition in develop-

ing market regions.

The Full Monte

James P. Hanson, Marketing Technology Service, Inc.

Brand new technology for unitized airlaid composites has been developed which involves significant departures from conventional techniques for making airlaid products. Two major new MTS developments (patents pending) will be presented which will be made available to the industry under license after INSIGHT. Key details of the performance of these processes will be demonstrated for wiping applications, profoundly soft fabrics and structural composites.

Cellulose Meltblown Nonwovens Based on the Lyocell Process

Marian Herz and Amar Neogi, Weyerhaeuser Cellulose Fibers

Today, cellulosic nonwovens are prepared predominantly from viscose and lyocell staple fibers using various bonding processes. An alternative technology is the meltblown process that is used worldwide for the manufacturing of nonwovens from synthetic polymers. Through the development of the lyocell technology, for the first time it was possible to prepare cellulose meltblown nonwovens as well. Based on high hemicellulose pulp as the raw material, recently Weyerhaeuser demonstrated and patented an appropriate meltblowing method. In close cooperation between Fraunhofer IAP, Weyerhaeuser and Reicofil GmbH, the results of the lab scale research were transferred to a pilot plant scale at Fraunhofer IAP. Here, a pilot line was built with a working width of 60 cm and a dope throughput of approximately 40 kg per hour. It was shown that tested pulps with different levels of alpha cellulose do not have a significant influence on the nonwoven properties. The absorption and the strength of nonwoven samples were also tested. The three companies are now seeking a company wishing to participate in the commercialization of the technology.

Insight 2015, Book Today, Here is the Agenda

K.D. (Kris) Malowaniec, Paul Hartmann AG

Insight Conferences always reflect the recent developments in both technology and markets. In 2015 the world of our industry will be different. The society, the consumer needs, their habits, products and markets will evolve from what we know today. My paper gives you an insight into this virtual world of tomorrow by suggesting the program for our 2015 Conference. The vision is based on serious sources and not just a sci-fi novel. You may already today develop concepts for the time to come...

Absorbent Core: The Next Generation (and Beyond)

Phillip Mango, Phillip Mango Consulting

Absorbent cores, whether for feminine hygiene pads or nonwoven mops, puppy pads or poultry pads, have come a long way from textile scraps and wadded tissue to the multi-layer, multidensity superabsorbent containing composites of

today. Now, competing demands for higher performance and lower costs have resulted in a plateau in this evolutionary progress of absorbent core design. Next generation designs will have to address escalating petroleum-based raw material prices on one side, while still attempting to improve the fluid handling performance characteristics on the other. How well this is accomplished will determine whether the next few years will be a "renaissance" for absorbent core design or "dark ages". This paper will briefly trace the history of absorbent core development, then discuss current designs and products. Then, the next generation products which will be introduced over the next five years will be disclosed and critiqued. Finally, some truly revolutionary ideas for new designs and new raw materials will be proposed.

Key Trends In The Global Hygiene Products Industry: Product & Consumer Sophistication Set The Scene.

Stacy Neier, Euromonitor International

In this presentation, Euromonitor International will provide delegates with the highlights of its latest research on the global hygiene products industry, which covers 80 countries worldwide and monitors the industry's performance since 1997, with forecasts to 2010. By analyzing the performance of the global hygiene products market over the last five years and concentrating on the latest emerging developments, Euromonitor International will identify the major trends and issues now impacting the market. This discussion will be all encompassing - covering changes in distribution patterns, consumer lifestyles and demographic profiles, as well as the evolution of products, marketing techniques and overall consumer demand. Having established the key dynamics impacting the market, Euromonitor International will then predict how each of these factors will affect the future growth of the hygiene products industry - highlighting key geographic markets and product sectors to watch over the next five years.

Location, Location, Location - That is the Question & Answer for Implementation of Absorbent Products

*David S. Nelson, R & L Engineering Inc.
and John M. Tharpe, Marion Engineering & Technical Services, Inc.*

This presentation is an analysis of the economical use of airlaid materials as the absorbent core for disposables products.

World Demand and Supply Outlook for Spunbonded Polypropylene and Spunbonded/Meltblown Composites 2005-2010 -- An Update

David J. Price, John R. Starr, Inc.

This is an overview of certain key findings from the firm's recently completed study "World Demand and Supply Outlook for Spunbonded Polypropylene and

Spunbonded/Melt Blown Composites 2005-2010". This study, which is an update of earlier releases, provides global and regional analysis of the demand, supply and the demand/supply balances currently existing and projected for spunbonded and spunbonded/melt blown polypropylene nonwovens used in hygiene absorbent products, medical and other protective apparel, construction, and other consumer and industrial uses.

Absorbency: Does Anybody Really Know What It Is?

Carlos E. Richer, Richer Investments

Everybody has their own definition... fasten your seat belts as you may have to make a quick change of roads. If you do not like surprises it is better not to attend this speech. In this article we will take a microscopic look at diaper performance all over the world, with many diaper performance graphs and comparisons from Asia, Europe, Middle East, India and America. We will look at the effect of absorbency under load and its correlation with diaper rewets and the overall interpretation of absorbency as defined by the end user. We will define some simple but not frequently used indicators to help you improve diaper performance. We will also explain the correlation between AUL and the probability of leakage for a given diaper design and how you can use mathematical modeling to reduce your diaper costs and improve diaper performance at the same time.

Fiber Finishes and Additive Options for Synthetic Fibers

Horst Ring, Schill & Seilacher GmbH & Co. KG

Physical and performance properties of nonwovens can be customized by topical treatments or functional additives. Surface treatment is a flexible cost-effective way to create a multitude of tailor-made effects. This paper is to give an overview of finishing treatments for nonwovens (spunlaid and carded) to achieve a variety of different characteristics: hydrophilic, durable hydrophilic, hydrophobic, antistatic, softening, repellent, absorbent, wettable, etc. The commercial impact is illustrated by several examples. Furthermore, an insight into relevant test methods of nonwovens' performance properties are given. Finally, selected highlights from the latest R&D trends are presented.

High Throughput Electrospinning for the Surface Application of Nanofibers

*John Robertson, InfoSight Corporation
and Ashley Scott, NanoStatics LLC*

Many people are looking at electrospinning for numerous potential applications. This presentation will discuss the ability to scale up the process and allow this technology to enter the commercial sector.

Prismatic Monochromatic Light Microscopy - A 10,000X Breakthrough Tool for Medical Nonwovens Fabrics

Eric Rowley, Conversion Technologies International and Stanley Truman, Independent Researcher

This presentation is a world premier announcement of this device and its capabilities. Stan and Eric, the co-developers of this microscope device, will take you on a quick journey from the concept to the current state of the device. They will offer illustrations and images taken through the scope that few people have seen and fewer have explored. These will include micro- and nano-fibers that illustrate things that even the electron scopes do not. This device could change nano engineering research, quality control, and biological examination in our nonwovens world. The world of small is getting a lot bigger for all of us.

A Fresh Look at a Proven Technology - The Use of Flotation Dryers in Nonwovens Applications

Michael Sellers, Advance Systems, Inc.

This paper will look at different applications of flotation dryers in the nonwovens industry, with examples ranging from hydroentangling to air laid. It will discuss the benefits and flexibility that can be found by applying this technology that has been proven to be very effective in other industries. Finally, it will examine real life scenarios comparing today's technology, and will illustrate some different ways to dry a similar product.

Development of the Airlaid Business - What a Long Strange Trip It's Been

William P. Stevens

From its early origins as a barely runnable fabric-making process thirty years ago, the airlaid process has changed a lot, both in equipment reliability and in product focus. Early efforts to replace high quality paper towels with bulky airlaids have evolved into substantial business in baby wipes, feminine hygiene absorbent media, packaging of food products and many specialty applications.

Latex bonding has been complimented by thermal bonding, spunlacing and combinations. Hydrogen bonded products are out in the market and a whole new wave of new applications involving mostly synthetic fiber is coming. This paper is about the development of airlaid technology and its possible future.

Nanoval Spinning - A Way to Submicron and Nano Fibers

Martin Stobik, Nanoval GmbH & Co. KG

The Nanoval process for nonwovens differs from all other spinning processes known so far. A liquid monofilament - melt or solution - is made to split up into a multitude of finer filaments which then solidify. Longitudinal drawing to the final fiber thickness is avoided. The result is: finer filaments, higher throughput per spinning hole and consequent-

ly per web width, and less energy as only cold air is used, all this fully in contrast to meltblown systems. The equipment is simple and robust in production operations. Filament diameters may vary in the range of 3 to 15 μm and due to recent developments even into the nano domain below 1 micron. Coarser filaments can be produced, but are not the main focus as the process benefits lie in the finer grades. Spin beams according to this new technology can be installed in addition or replacement to existing ones and of course in new spunbond/meltspun nonwoven plants.

VILOFT - The Route to Flushability

Stefan Sulzmaier, Kelheim Fibres GmbH

Higher consumer awareness and stricter regulations from local governmental bodies and the European Union have forced the nonwoven industry to rethink the strategy for products that are likely to be disposed of in waste water systems. Currently most products contain a high level of non-biodegradable material and do not break up when flushed in the toilet. This means that those products are either held back in the screens of the sewage farms and have subsequently to be disposed of in solid waste streams, or if they pass the screens, remain in the slurry of the sewage farms and do not degrade, and hence lead to reduced useability of the slurry as fertilizer. With this in mind both EDANA and INDA are developing standards to define the term "flushability". Also some large brands have decided to capitalize on this by approaching the market pro-actively with products that are "green", i.e. show greater environmental responsibility. The German based rayon manufacturer Kelheim Fibres GmbH has now developed a fibre that helps the nonwoven industry to achieve all the goals towards being seen as environmentally friendly. The core of a claim can be flushability and biodegradability, as well as the use of renewable and sustainable raw materials. This new fibre, VILOFT NONWOVEN, is a cellulosic fibre that is perfectly designed to enable fabrics to break up when flushed in water, whilst maintaining the required strength for packaging and use. Due to its cellulosic nature the fibre is fully biodegradeable. The lecture describes the basic fibre properties, the different processes it has been optimized for, the way it works when the fabric is flushed and which test methods are used to describe dispersibility.

Profit from Effective Dust Testing

Bob Waldron and Bob Makolin, Abba Makolin Waldron & Associates, LLC

Innovation and the 'Flat World' global economy are causing nonwovens producers and converters to explore and enter non-traditional markets for their products. This move brings many opportunities and challenges. One of those challenges is to ensure your products meet all the requirements of the new markets, including dustiness or linting. Knowing about and using effective nonwovens dust test methods will prevent problems and aid in troubleshooting dust concerns of customers in these new markets. The result: Satisfied Customers and Increased Profits!