NONWOVENS DIVISION UPBEAT ABOUT INDUSTRY'S FUTURE AND STRATEGIC ALLIANCES

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DYNAMIC KEYNOTE AND STRONG TECHNICAL PROGRAM PREPARE DELEGATES FOR BUSINESS IN A GLOBAL INDUSTRY WHERE CAPITAL INVESTMENTS ARE INTENSIFYING

THE 1998 NONWOVENS CONFERENCE AND TRADE FAIR was held in sunny St. Petersburg on March 9-11 with 300 individuals in attendance. Other than a violent storm in the middle of the first night, we were blessed with welcomed mild sunny weather. During off times one could jog on the beach, walk to the pier to see the pelicans or have a fine meal. Of special interest was the traveling exhibit of Titanic artifacts. The show arrived in town about the same time.

Preceding the Opening Session, a Nonwovens Pub & Welcome Reception on Sunday evening gave new and experienced attendees the opportunity to become acquainted with each other, meet officers of the Nonwovens Division, and mingle with friends and associates.

(left to right) T. M. Singh, David Markgraf, Ted Wirtz, and Paul Kochar at the Opening Session.

On Monday morning, Division Chairman Paul Kochar of E. I. du Pont de Nemours Inc. opened the conference assisted by Conference Chairman T.M. Singh of Evanite Fiber Corp. who offered an overview of the program. Board Representative David Markgraf of Enercon Industries brought news from TAPPI headquarters, made mention of our objectives and international structure as well as the usefulness of the TAPPI web site for finding information about conferences, exhibits and other events. He emphasized the importance of cross fertilization between divisions and noted that the interactive CD "How Paper Is Made," has already sold 5000 copies and is just about to break even on its production costs. At only US$ 29 a copy for TAPPI members, it is a fabulous bargain!

KEYNOTE: INDUSTRY OVERVIEW

We were fortunate to have Ted Wirtz, president of INDA, as the keynote speaker. This trade association of the Nonwovens Industry has a staff of 15, an annual budget of US$ 2.5 million, and 170 corporate members who represent a cross-section of the nonwovens industry.

In his address, Wirtz spoke about current and future trends and offered an industry overview. He reported the nonwovens market in the United States to be 20 billion sq. yds. with 85% as disposables and only 15% as durables. He reviewed end use areas in each of the categories. The breakdown by manufacturing process is approximately 37% spunbond & meltblown, 15% needle punched, 12% air laid, 11% dry/thermobond, 10% spunlaced, 8% dry/chemical bond and 7% wet laid. The major producers of nonwovens were also listed. The future trends as predicted by process patents was 28.5% melt blown, 26.9% spunbond, and 12.3% by wet formed methods followed by lesser categories. Some nonwovens, such as coverstock, have reached commodity status with

Nonwovens Division Technical Award winner S. K. Batra (left) is presented the Mark Hollingsworth Prize by George Zguris of Hollingsworth & Vose Co.

TAPPI Board Representative David Markgraf presents the Nonwovens Division Leadership and Service Award to Edward Homonoff (left).

resulting challenged profitability. Fiber-to-fabric processes consisting of wet laid, spunlace, air laid and needle punched accounts for 65% of the total production with only a market growth rate of 3-5%. Polymer-to-fabric processes consisting of spunbond, melt blown and film, accounts for 35% of the total production with a growth rate of 6-8% per year. Both are down in anticipated growth from the double digit growth experienced a decade ago. More mergers and acquisitions as nonwovens consolidate was predicted with falling trade barriers and distribution channels opening and improving. Capital investment will intensify with US$ 2 billion expected to be spent within the next five years.

CERTIFICATES AND AWARDS

TAPPI is noted for recognizing its past chairmen and outstanding speakers for their leadership and technical accomplishments. Certificate and award presentations were held during the Opening Session.

Certificates of Appreciation were presented to the following chairmen: Thomas McNeal, Technical Program (1997-1998); Edward Wotier, Nonwovens Binders and Additives Committee (1996-1998); and Lee Currier, Filtration Media Committee (1996-1998).

Certificates of Recognition were presented to the following 1998 session chairs: Royall M. Broughton, Thomas B. Hamilton, Michael P. Dunn, Girish Grover, Rudolph F. Janis, Kathryn L. Brannon, John R. Starr, Mary E. Pierce, Joginder S. Malik, Graham K. Moore, Michael A. Hodge and Arnold F. Blam.

There was a tie for the 1997 Conference Best Paper with Tapio Kuusinen, Robert Barker and Donald Alexander for the paper *Experience with Life Cycle Assessment in Woven Textiles* and Robert L. Shambaugh and Rajeev Chhabra for the paper *Fiber Vibrations and Distributions in Melt Blowing.* In addition to these, Session Best Papers were awarded to J. Robert Wagner, Frank. J. Miskiel, Paul Nedwick, Stacey L. Wertz, and Jan Gustavsson, Michele Mlynar and Larry Wadsworth, Ping Hao and Hageun Suh.

The Nonwovens Division honors both technical accomplishments and leadership and service. This year our most prestigious awards went to Subhash K. Batra, Ph.D., and Edward C. Homonoff. Batra, professor of textiles at North Carolina State University in Raleigh, received the Nonwovens Division Technical Award, which is accompanied by the US$ 1000 Mark Hollingworth Prize. He is the founder and director of the Nonwovens Cooperative Research Center, has published widely, and is the recipient of other awards and honors.

Having served the Division in many capacities, including past Division chairman, and as a frequent conference presenter, Homonoff merited the Leadership and Service Award. He is the director of R& D at Knowlton Specialty Papers, Inc.

TRADE FAIR

On both Monday and Tuesday evenings, there was a technology exhibition and reception. This gave the trade fair's 22 booth representatives an opportunity to introduce their latest developments, hardware and literature and allowed everyone to meet new clients and network with old and new friends and associates.

John Starr (standing) moderated the highly engrossing panel discussion, "Future Prospects for Technology to Reach Global Nonwoven Fabric Markets." Panelists included (l to r) Rowland Griffin of Johns Manville Corp., Alan W. Meierhoefer of Dexter Nonwovens Div., , Ron Smorado of BBA Nonwovens, and Laurence Li of Buckeye Technologies.

The PIRA Panel included (seated l to r) Larry C. Wadsworth of the University of Tennessee, Ellen Noonan Schutt of Nonwovens Industry Magazine, and Bhupender S. Gupta of North Carolina State University; (Standing l to r) Russell S. Lyon of Valmet, David DeWulf of INDA, Graham K. Moore of PIRA (Moderator), and Philippe Ehret of Fiberweb France SA.

TECHNICAL PROGRAM

As in the past, the technical sessions had a diverse mixture of excellent technical papers and presentations. In addition to the many technical sessions, there was a new technology showcase, a nonwovens products tutorial, and three panel discussions, which included a special PIRA session. The PIRA session emphasized the factors and pressures that are expected to influence the future change and direction in the nonwovens industry.

FIBERS: The physical properties of various fibers was reviewed and the surface wetting and energy properties of cellulose, acetate and polypropylene was discussed. Of particular interest was a paper on the electrokinetic properties of fiberglass surfaces, surface potential and zeta potential and its measurement and the interaction with pH. The conflict between wet lay fiber dispersion web formation was addressed. Advantages were shown in using deep grooved polyester in combination with chemical cellulose to produce high absorbent paper which resulted from the capillarity of its structure. The availability and advantages of antimicrobial bleached cotton fiber was discussed and the need for 200 to 400 nanometer average diameter glass fiber for filtration to remove molecular sized contaminants was emphasized.

BINDERS & ADDTITIVE: Waterborne polyurethane was said to offer a wide variety of properties, including abrasion resistance, excellent flexibility, toughness, solvent, stain and chemical resistance and excellent UV resistance. Modified latex can be used to improve urea formaldehyde resin when used for glass mat. Formaldehyde emissions from thermosetting resins and trends for latex emulsions in China and the U.S. was reviewed. Innovations in roofing and filtration binders and the use of styrene/butadiene based polymers was discussed. The new binders for fiber glass roofing mat indicate that a balance between tensile and tear strength can be made.

PROCESS: High speed photography and statistical analysis was shown to be capable of determining fiber distribution out of the die when melt blowing. Such measurements would permit improvements in the web structure to be made. A method was discussed for wet forming cotton in combination with softwood pulp using retention aids and associated thickeners that eliminates strings, clumps and holes. Productivity gains in swab manufacture were realized using the Pareto technique to solve down time and inefficiency problems in their manufacture. A new closed air lay system with electric dust separators for processing textile, recycled and refined wood pulp fibers was disclosed. Because of the greater demands by various end use applications, the nonwovens industry must achieve a basis weight uniformity better than + or - 5 %. This will require on-line gauging and closed loop process control capability.

FILTERS: Alternatives and life cycle analysis of a range of automotive spin-on oil filters was reviewed and the use of stainless steel fiber for producing filters that can be cleaned and reused was shown to be a possibility. A proposed test for multipass beta filtration testing using a new test dust, revised particle counter calibration procedure and an on-line particle counter was recommended. It is known that filtration efficiency can be improved by electrostatic charging and therefore the use of embedding conductive additives was

The 1998 Nonwovens Division leadership

Rob Bender of Evanite Fiber Corp. is the new publicity chairman of the Nonwovens Division.

investigated. Automotive air filter media with increased life and higher dust capacity was reported.

FABRICS: An excellent paper was presented on the plastic fabrics used in the nonwoven industry. The fabrics are used for forming, pressing, drying and conveying of both wet laid and dry laid nonwovens. Fiber types, permeability, electrostatic charge, cleaning, shrinkage, properties and advantages and disadvantages of these fabrics were reviewed. Two and three layer thermally bonded cotton surfaced laminates and the dimensional stability of melt blown polyester nonwovens were reviewed. A comparison of spunbond technologies was made and new innovations and their advantages were reviewed.

PRODUCT CHARACTERIZATION & MODELING: New equipment for hydrostatic head, on-line air permeability and Elmendorf tear testing was described. An image analysis method was presented for characterizing fiber orientation and diameter variability. Also, image analysis of roofing mat to characterize the web structure permits the determination of small area (basis weight) uniformity, fiber bundle orientation (directional control) and fiber bundle diameter (dispersion quality). A method using a series of different fluids was shown to be capable of estimating contact angle of the fluids with the surface of the media pore and allows an absolute measurement of the water repellency of porous media. A correlation was made of penetration results between filter testers that use different particle generators and detection methods. Simulation of web formation of 3-D structure wet-laid glass fiber veils, indicated it was possible to determine the pore size distribution, pore radius, thickness, compressibility, fiber contact points and tensile strength of the material.

ENVIRONMENTAL: The health and safety aspects from exposure to fiber glass was said to be minimal or nonexistent due to the high dissolution and leaching rates of insulation types of glass. As the global standard of environmental management and compliance improves, companies failing to make performance audits will face increased penalties.

FUTURE TAPPI & INDA CONFERENCE

Through the efforts of Ted Wirtz and Wayne Gross, Executive Director of TAPPI, and other representatives within INDA and TAPPI, we are moving towards the first INDA / TAPPI joint conference in year 2000 (See p. 261 of *TAPPI JOURNAL's* May issue). The location of this joint venture, yet to be approved by both boards, is still undetermined, but this landmark collaboration is expected to occur. In addition, a joint nonwovens technical journal is under discussion.

Wagner is TAPPI JOURNAL technical editor of the Nonwovens Divison.

The 1998 Nonwovens Conference Proceedings contain 34 papers presented in 13 sessions. This 350 page, soft-cover book is available through TAPPI PRESS. Request IItem No.01051398. Price: US$ 48 (TAPPI member); US$ 72 (List) plus shipping.

Holding the receptions in the Exhibitor Hall mixed business with pleasure for everyone.

Demonstrating equipment at the trade fair

Session 13: Building & Industrial Mat was last on the program but drew a big crowd. (l to r) Daojie Dong, Owens Corning Science & Technology Center; Arnold Blem, B. F. Goodrich; Howard Bender, B. F. Goodrich; Thomas Hesterberg, Johns Manville; Sheila Miller, Keller and Heckman; and Randall Bresee, Univeristy of Tennessee.

(l to r) Behind the scenes: Charles Bohanan, TAPPI's Technical Manager for the Nonwovens Division, confers with Paul Kochar and T. M. Singh.

MARK YOUR CALENDARS

Next year, the 1999 Nonwovens Conference & Trade Fair will be March 15-17 in Orlando, FL. We look forward to seeing you there.