GUEST EDITORIAL

STM Committee Update

By Cos Camelio, INDA Technical Director

The INDA Standard Test Methods Committee (STM) is among the most active at INDA. The committee meetings are well attended and the members represent a cross section of the association at large. STM, along with other INDA committees, offers a valuable opportunity for members to work together for the advancement of the nonwovens industry. The work of STM also underscores the growing cooperation INDA enjoys with other nonwovens industry associations around the world.

I'd like to present a synopsis of the work this committee has done in the area of:

• Harmonization of standards with EDANA.

• Modification of IST 80.3, Spray Impact (similar to AATCC 42)

• Comparison of ASTM 5035 and ISO 29073-3, Strip tensile methods (this is shown on page 9)

Harmonization of Standards

Back in October 2001, INDA had the opportunity to attend a meeting of EDANA's Technical Committee to discuss harmonization of standard test methods. The topic of harmonization had been discussed over the prior two years with the result that a number of methods had been harmonized between the two associations. In this October discussion, INDA presented a list of 26 test methods, either EDANA or INDA methods, that were possible candidates for harmonization. Some of these methods were new to one or the other association while others were similar to methods already existing in either association.

In the spirit of cooperation, EDANA formed a task force of test method specialists to review those INDA methods that were similar to or non-existent in the EDANA methods. Their first pass resulted in a recommendation that four INDA test methods be approved as new EDANA methods. EDANA's Technical committee approved this recommendation. Twelve of the 26 methods were EDANA methods dealing with the characteristics of superabsorbent powders. Since INDA did not have any methods comparable to these, INDA's STM committee voted to accept these methods as new INDA methods. The overall result is that within 14 months, 16 of the 26 methods have been harmonized. Now comes the more difficult task of trying to reconcile those methods that are similar in nature but not identical. This will take more time and considerable negotiations but I'm sure the result will be additional harmonized methods.

Another point of interest in the road to harmonization is that EDANA, which acts as the Secretariat of ISO TC38 WG 4, has invited INDA to participate in this work group. This is the first time that the two associations have jointly participated in a standards forming committee. The work group also has a representative from ANNA, the Asian nonwovens association, and we have asked a representative of ABINT, the Brazilian nonwovens association, to join as well. This provides a great opportunity for harmonization of standards at the international level.

Modification of IST 80.3, Spray Impact

INDA and its member companies participate on a number of standards forming committees and work groups. One of these groups is working on setting the standards for barrier properties of operating gowns and drapes and the appropriate test methods for measuring these properties. One test method that is used to help differentiate the barrier properties of the material is AATCC 42, spray impact. This test is virtually identical to INDA's test method 80.3. These methods use a spray of a specific amount of water onto a fabric backed by blotter paper that is resting at 45° to the plane of the spray head. The amount of water that passes through the fabric and absorbed by the blotter gives an indication of the repellency of the fabric. The difficulty with both methods is if the fabric is less repellant, it is difficult to precisely measure the end result.

INDA conducted a study to see if these methods could be improved upon. Considerable testing was conducted with a number of different fabrics; several different blotter papers with a range of absorptive capacities and some slight modifications were made to the test apparatus. As a result, we found that the quality and the absorptive capacity of the blotter paper contributed greatly to the variability of the results. Some blotter papers distorted when wet and created voids under the fabric sample and this resulted in misleading results. Some blotter papers did not have high enough absorptive capacities and this resulted in puddling under the fabric sample, again giving false results. Finally, a finite specific end point was established for the end of the spray portion of the test. Once this time was reached, a barrier was introduced under the spray head to prevent any remaining drops of water from impacting the test fabric.

These changes in the apparatus and the use of a blotter paper with uniform surface and high absorptive capacity have reduced the standard deviation considerably and makes these tests much more reliable in predicting the repellency of fabrics. These modifications will be presented to AATCC for their review in May.

If you would like more information on any of these topics, please contact Cos Camelio at ccamelio@inda.org or 919-233-1210 x114. ***— INJ***

For more on the STM Standards work, turn to page 9, Technology Watch.

Press to return to the Table of Contents

RESEARCHER'S TOOLBOX

NASA Tech Briefs

A good source of information on any of the numerous aspects of nonwovens research is always welcomed by the nonwovens R&D community. A potentially good source for such information is a journal that is published by NASA, the National Aeronautical and Space Administration. This branch of the Federal Government has certainly been concerned with a wide range of science and technology matters in the past several decades. Also, it has been the dispenser of a very large amount of money during that time.

Also, NASA has become the custodian and user of vast segments of technology and engineering in carrying out the far-ranging assignments it has dealt with over a period of nearly fifty years. Some of that technology and engineering is now made readily available within the pages of that NASA journal, titled *NASA Tech Briefs*.

This journal is sub-titled "Engineering Solutions for Design & Manufacturing," which well describes the major thrust of the journal. However, a fairly broad view of "engineering" is taken is assembling the contents of the journal. No only are "hard engineering" matters covered, but a wide range of other items as well. These include material science, computers/ electronics, computer software, technology transfer, NASA patents and licensing opportunities, physical sciences and others.

Each issue has a different "Technology Focus," with several technical papers covering most aspects of the highlighted technology. This coverage includes principles, equipment, applications and other elements of the featured technology. Two recent examples of this focus include Imaging/Video/Display Technology and Sensor Technology.

Each of the monthly issues contains extensive information on the 12 Research Centers maintained by NASA, along with the technology specialties of each Center and personal contacts for these activities. Also, seven major Program Offices that NASA uses to develop and oversee technology projects of potential interest to industry are identified, along with personal contacts at each of the geographically dispersed offices.

NASA maintains Business Facilitators at ten locations, whose objectives are to establish joint sponsored research agreements and incubate small start-up companies with significant business promise.

Each issue of NASA Tech Briefs also has a department entitled "Technologies of The Month." This department is sponsored by Yet2Com, the internet site concerned with licensing technologies developed by clients, and also seeking help with technologies requested by clients. A recent issue, for example, offered an item under the heading: "Capillary Filtration System Removes Odors and Gas Easily and inexpensively." This technology, offered by Honeywell Filter, gave the following description:

Closed environments such as aircraft cabins, vehicles, laboratories, and cleanrooms require efficiently and effectively recirculated and refreshed air. Activated carbon filters, which are commonly used in these applications, are only effective for a short time, and perform poorly at low odor concentration levels. Honeywell uses proprietary capillary wicking fibers to create a new filter that contains activated carbon and other filtering materials instead of using adhesives to glue the carbon to the fiber surface.

The fibers include channels that are packed with the odor-absorbing materials C typically carbon, baking soda, or zeolites. The fibers are formed into a mat that is sprayed with a chemisorptive reagent that impregnates the fibers and absorbs odors and gases. The filter can be used without a pump, so it takes up little space, yet removes odors from the airstream economically , effectively and continuously with a long lifespan.

Specific contact information is provided, with an offer for a complete report. These and other new licensable inventions are offered at the NASA Internet site: www.nasatech.com/techsearch .

The journal carries a rich selection of advertisements of interest to a research organization, along with new product descriptions and literature and web site information.

While this journal is prepared for NASA by a commercial publishing organization (Associated Business Publications International, 317 Madison Avenue, New York, NY 10017; 212/490-3999), a subscription is free to qualified subscribers through NASA Tech Briefs, P.O. Box 10523 Riverton, NJ 08076; Fax: 856/786-0861; www.nasatech.com/subscribe .

Super PDA and Tablet PC

All personal digital assistants (PDAs) are not created equal. If all you want to do is store names and phone numbers, any electronic organizer will fill your needs. However, if you often find yourself away from your computer, whether out of the room or out of the country, you may want to consider one of the beefier handheld offerings that are becoming more common..

This latest development in the digital assistant world is the introduction of the PocketPC B a device that is kind of a

cross between a laptop computer and a simple digital organizer, in essence, a "super PDA."

Compaq's "iPaq" was the first to really hit the market several months ago; but more recently, companies like Toshiba, Sony, and others have rolled out their own version of the increasingly popular PocketPC.

The thing that sets these handhelds apart from the Palm Pilot of some five years ago is that they run much of the office software that you're already familiar with. Most units run Windows CE, a lightweight version of Microsoft's popular desktop operating system.

The majority of them also run stripped-down versions of MS Word, Excell, Outlook, and Windows Media Player. Several of the current PocketPC models also support Java. If you get a model that is equipped for a wireless network (optional in most cases), you can also check your E-mail and surf the Web on your palmtop.

Their familiar interface and interoperability with desktop computers have made the new generation of handheld computers very popular as a practical office tool. Imagine, instead of recording laboratory data by hand and then recopying it into your desktop computer, you simply enter it into an Excell spreadsheet on your PocketPC. Once the data is stored, it can be transferred to a desktop computer via a wireless network connection, or through its cradle which connects to the desktop unit.

For more information on this latest electronic help, consult web sites of some of the major suppliers: http://www.compaq.com/products/handhelds/pocketpc/H3870.html; http://www.pda.toshiba.com .

Another very interesting version of the ubiquitous computer that has recently be introduced is the "Tablet PC," an innovation particularly coming from Compaq.

This computer unit consists of a thin, light weight laptop computer with all the power and features that are now expected in such a unit. By opening the monitor screen, rotating it and folding it down onto the computer bottom, the unit changes into a powerful Tablet unit that becomes as simple as a pad and pen.

The Tablet configuration accepts entries with a mouse or keyboard, as well as a digital pen. Thus, you can write or sketch on the screen and have such entries become a part of the document on the screen; such additions can be handled in much the same way as any document. This combination of text and hand written notes can be saved, E-mailed, printed, or down-loaded into a desk computer like any laptop. Such documents can be shared with other PC users, whether they have a Tablet PC or not.

For more information on this computer version, consult the website of Compaq: http://www.compaq.com .

Laboratory Inventories

Back in the "good old days," when a researcher needed a particular chemical, a purchase was made from a chemical supplier, the reagent was received and the researcher used the material as required. If there was excess material left over, the reagent bottle went onto a shelf in the stock room. There it sat until (1) someone finally got around to cleaning out the stockroom of unwanted items, (2) the bottle broke and it was discarded, or (3) the darn thing exploded and that was the end of it (good old days?).

Times have changed, and how!

Today's researcher might access a company database (perhaps on a website), locate the reagent in one of the laboratory's stockrooms or locate the reagent at one of the company's other locations, or locate another research group willing to share an order.

The reagent order would then likely be matched against an archive of Materials Safety Data Sheets (MSDSs). The company's health and safety officer would receive a notification and begin to work with the researcher on making the necessary arrangements for storage, disposal and safety precautions.

When the reagent arrived, the bottle would be bar coded and entered into the automated tracking system. A chain of custody would be generated, with signature verification to ensure that everyone who handled the hazardous (?) Chemical had the proper training and authorization.

Invoices would be sent to the correct cost centers, and chemical expiration dates would be entered into the main inventory database. Firefighters and paramedics would have ready access to emergency response procedures specific to that reagent.

While all of this may sound very cumbersome, there are solid reasons for each step, often backed up with some accidents and/or tragic experiences of the past. Further, with the increased security concern since September 11th, along with the increasing theft of certain chemicals by rogues who are operating illegal drug labs, and increasing government enforcement of State and Federal regulations, there is an absolute necessity of "knowing where your chemicals are!"

The solution, of course, is an effective and efficient inventory management system. And it would seem that a well-designed computer program is the way to manage, control and respond to all of these elements. Providers of commercial inventory management systems have shown that such is the case; no new technology is needed, but rather the adaptation of existing technologies.

At the present time, commercial systems are moving toward Web browser technologies and readily available database systems to acquire, store, and access basic inventory data. Such systems permit adaptation to special needs, while at the same time allow facile data entry, tracking, remote bar coding, report preparation and the other tasks that make for an effective system. When such a system is in place, it isn't too difficult to manage those lost bottles, multiple orders, disposal timetables, MSDSs, and legal requirements. This

can be the case even where several laboratories in a system may not be in the same building or location. It is even possible that a comprehensive inventory management system might serve a multinational company, where the laboratory and plant locations are on different continents.

The leading suppliers of commercial inventory management systems is ChemSW, Inc., which has been involved in this activity since 1991. ChemSW offers several software programs, the most appropriate for laboratory stockroom, plant and similar inventory management requirements being their CISPro Chemical Inventory system. This inventory system is essentially a "cradle-to-grave" program; it identifies, tracks and positions a reagent, chemical, or raw material lot from the time that it is ordered, through receipt, storage, use, long-term storage and final disposal. All of these elements can be dealt with for a single or multiple sites.

The basic program, plus recent module additions, help used to meet evolving Hazardous Material Inventory Statement (HMIS) reporting requirements. The software can produce accurate documents formatted to meet both International Fire Code (IFC) and National Fire Protection Association (NFPA) code requirements. With accurate, real-time tracking information, the reporting feature enables the easy transformation of the inventory information into the exact formats required for hazardous materials, building and fire code compliance.

ChemSW has also recently released a Portable Inventory Manager system (PIM), which utilizes a sophisticated bar-coding capability to allow tracking of items which are moved about a facility. The system ensures security in addition to automatically generating invoices to the appropriate cost centers, labs, grants, groups and individuals, operating divisions, etc. It allows the security and financial responsibility to move as the actual items are relocated.

This company also has recently introduced a system for keeping track of samples and related items that are "in process" and need to be carefully following. The tracking can begin when a sample is submitted and then followed through multiple stages for various processing steps. With this system (STIS Sample Tracking and Inventory System), a user can register samples, create work lists, assign tests, enter test results and check progress and status, all with complete audit trail and reporting. Tests may be assigned to a single sample or to a batch of samples at once.

To meet GLP/GMP and 21 CFR Part 11 requirements, STIS enables the auditing and reporting of any changes to sample status, with the date and time and identity of the user who made the change. STIS pinpoints exactly where a sample is located and in what storage conditions, from the name of the facility right down to the specific position in a particular test tube rack, according to the developer.

The system includes a suite of functional reports, and customized reports are easily created. A desktop version of STIS is in widespread use, and a new Oracle version, which is ideal for larger, client-server applications with multiple labs, is also available.

This company is also the supplier of a comprehensive database of IR spectra. This collection has spectra of over 175,000 materials and over 147,000 compounds in it. The program is available in various formats and version that are compatible with most other data systems. The program has multiple query options to match unknown spectra with identifiable compounds, as well as to provide structure searching.

(ChemSW, Inc., 420 Executive Court N., Suite F, Fairfield, CA 94585; Tel.: 707/864-0845; Web site: www.chemsw.com . Free demo copies of programs are available on the Internet at www.chemicalinventory.net .)

Another potential source of inventory management software is Logical Technology, Inc.; their offerings are particularly oriented toward hazardous materials and environmental reporting systems. With their full Environmental Reporting Module (ERM), inventory tracking with the input of each dated receipt, usage, generation and shipment of hazardous materials and wastes is possible. (Logical Technology, Inc., 6907 North Knoxville Avenue, Peoria, IL 61614; Tel.: 800/266-7591; 309/689-2900; Fax: 309/689-2911; Web site: www.comply1.com). ***— INJ***

Press to return to the Table of Contents

DIRECTOR'S CORNER

Building a Safety Culture

In recent years much interest and discussion in industrial safety quarters has centered on the matter of "Corporate Safety Culture." This concept can carry a variety of titles and details, but basically it comes down to a safety awareness and commitment as the major underpinning of all aspects of corporate or organizational activities and values, that is, of the Organization or Corporate Culture.

"Safety culture" as a recognized concept for organizational behavior first came onto the scene in 1987, in a report on the 1986 Chernobyl disaster, according to Dominic Cooper of Indiana University. Since then, many companies, institutions, universities and other organizations around the world have shown keen interest in developing such a "safety culture", in order to reduce the potential for both large-scale, Chernobyl-type disasters and routine accidents, states Dr. Cooper. Since September 11th, the concern and focus has only increased dramatically.

OSHA is on a similar culture kick, too. One of its strategic goals for the period of 1997 to 2001 was: Change workplace culture to increase employer and worker awareness of, commitment to, and involvement in safety and health.

One aspect of OSHA's concern and striving for this cultural change has been its Voluntary Protection Program work sites (almost 900), where the motivation for adoption of the cultural change has been the internal functioning of the company and work site management rather than an externally imposed governmental surveillance. Independent research has tended to prove that strong safety cultures are the single greatest factor for reducing accidents in any process.

According to OSHA, companies with strong safety cultures typically have fewer at-risk behaviors, low accident rates, low turnover and absenteeism.

Further proof has been provided by extensive surveys made by The Gallup Organization. These studies have found what it calls a strong link between engaged, committed workers and higher profits. The strong relationship between safety and profitability has long be used by safety and industrial hygiene personnel to promote the numerous concepts and practices of safety and industrial hygiene.

In the work by The Gallup Organization, use was made of 12 questions (called the Q12 survey tool) to get at employee feelings and attitudes. The answers provided by employees to these 12 questions will quickly give information on the specific workplace culture, according to Gallup personnel. The questions:

• Do you know what is expected of you at work?

• Do you have the materials and equipment you need to do your work right?

• At work, do you have the opportunity to do what you do best every day?

• In the last seven days, have you received recognition or praise for doing good work?

• Does your supervisor, or someone at work, seem to care about you as a person?

• Is there someone at work who encourages your development?

• At work, do your opinions seem to count?

• Does the mission/purpose of your company make you feel your job is important?

• Are your associates (fellow employees) committed to doing quality work?

• Do you have a best friend at work?

• In the last six months, has someone at work talked to you about your progress?

• In the last year, have you had opportunities at work to learn and grow?

In recent years this survey has been used by more than 87,000 divisions or work units within corporations and similar organizations; approximately 1.5 million employees have participated in such surveys. For companies that were able to provide data across different operating units, comparisons of scores revealed the following: Those units with high Q12 scores experience lower turnover, higher sales growth, better productivity, and better customer loyalty.

This is not to claim that this is the only organizational culture that can be used or that is successful or even profitable. Unfortunately, there are many examples of corporations, research groups and other organizations that would rate low in the Q12 scorings, and still may be considered successful, at least in the short run.

One industry observer (Judith Erickson) has indicated: "If top management believes that people are basically untrustworthy or lazy, it might make sure that employees are controlled and closely monitored" It will often blame employees for causing their own injuries and accidents."

Such corporate culture are described by Robert Jackall in his book, "Moral Mazes: The World of Corporate Managers" as having the following characteristics;

• Corporation is in a constant state of upheaval.

• Conformity is enforced.

• Managers adjust their personalities to the whims and wishes of the CEO.

• Morality is doing what the boss wants.

• Compromise is not moral defeat, it's a fact of organizational life.

• Managers do not want evangelists working for them.

• Things like injuries are ordinary in a corporation. "Accidents will happen." You adopt an ethos of pragmatism to get ahead. Adhering to absolute principles gets you fired.

• The rules: Don't bypass your boss, tell him what he wants to hear, drop it if he says so, do your job and shut up.

The gnawing question is whether things are getting better or worse; in what direction is organizational behavior heading?

The decade of the 1990's was a mixed bag. The USA did experience its longest period of economic prosperity. It was a decade of excitement and good times.

And injury rates declined to record low levels. At the same time there were indications that only a little progress had actually been made, and that much remains to be done. Consider the following:

• Safety ranked 15th out of 18 on the list of top organizational values, according to the American Management Association's 2002 Corporate Values survey. Empowerment and employee job satisfaction ranked even lower.

• 70% of companies surveyed were guilty of micromanaging; 59% failed to give credit; and 36% engaged in "kill the messenger" behavior, as reported by employees.

• Another Gallup survey reveals that 70% of U.S. workers are not engaged in, or are actively disengaged, from their work. Only 44% believe corporate leaders are trying to do what's best for their employees.

• Only 44% of human resource managers surveyed by the Society for Human Resource Management say their organizations effectively communicate strategic direction to employees.

• 81% of owners of businesses with less than 250 employees did not personally attend any sort of safety training seminar in the past 12 months, according to a survey by the National Federation of Independent Business. 87% do not have safety committees in their business. 45% do not have written safety rules or policies.

As one organizational consultant put it, "We never said that a company could only make money if they are safe and healthful."

"Anyone knows that sweatshops can be profitable. Selling drugs and loan sharking are profitable. A good safety culture is the optimal way to manage a decent and ethical company," says Jim Spigener, vice president, performance improvement technology, at BST, Inc.

In considering these alternative approaches, safety professional Hank Grotewold has said: "This is a moral failure, not a safety culture failure. Your system must be grounded from the start in a strong moral foundation."

In the final analysis and with thoughtful consideration, a moral basis must indeed be the foundation of long-term success and accomplishment for a safe and successful enterprise. Where human safety, life and welfare are intimately involved, this can be the only reasonable basis for management, whether it is a large corporation, or in one's own small sphere of influence.

Hopefully, such reasoning together will be an aid to the thinking of the busy R&D director as he/she considers their own responsibilities for safety and welfare.

The Company Mentoring Program

In Odyssey, the ancient Greek epic, as Odysseus (or Ulysses in the Latin) goes to fight in the Trojan Wars, he made his friend, Mentor, the guardian of his son. This guardianship was very fortuitous, as Mentor did an excellent job of helping Telemachus to grow, mature and become a wise individual.

As a result of this account, the word "mentor" has come to mean a wise, faithful and valued counselor, a person looked upon for wise advice and guidance.

Anyone who has ever had a good mentor knows that this can be a priceless gift. The schooling and shaping resulting from the efforts of a mentor can be lifelong and so very valuable. Small wonder then that the role of a mentor is held in such esteem. No wonder that many companies are establishing a more formal structure and assignments to obtain the benefits of such relationships.

With proper organization, the Company Mentoring Program (CMP) can be a boon to both mentor and protegé, and subsequently to the entire organization. Enough experience has been gained in recent years over a variety of conditions, companies and individuals that the important principles of an effective CMP have been delineated. One of the most effective proponents has been Dr. Barton Goldsmith who has lectured widely and has provided much thoughtful help in guiding such programs.

Dr. Goldsmith has said that a mentor's job is to help an organization and an individual to maximize potential and performance. Good mentors see things in an individual that may not be recognized by all.

The basic premise of a CMP is elegantly simple: Everyone in the company has some type of a mentor. The person who's been there only one day can be mentored by a person who's been there longer. By replicating this arrangement, the objective can be approached. And the objective is to have everyone in the company supported by someone who shares the goal of helping the protegé maximize his or her potential.

Dr. Goldsmith has described 10 steps to creating a CMP:

1. Decide if a CMP is right for the organization.
2. Start small, with assignments to only a few individuals.
3. Ask for feedback about what the team wants in a CMP; find out what people care about.
4. Get buy-in from the management team.
5. Get mentor training for individuals, managers and the executive team.
6. Create a culture by being open about the mentor/protegé relationship.
7. Build Trust with those participating; listen to their experiences and idea.
8. Celebrate small victories; spotlight mentor/protegé relationships.
9. Begin company-wide training.
10. Get the mentor team wide recognition; share the results with all.

Creating a good CMP or even an individual mentoring relationship is a process and it takes time. If just one of these 10 steps is integrated each month, Dr. Goldsmith indicates that progress is being made and a broad program will be in place in less than a year.

Here are some tactics that have been used by great mentors in successful situations:

• Motivation is a word and concept that can be overworked. Superficial "incentives" can make team members feel insulted or cheapened. Nothing will motivate as much as recognition and support from supervisors and peers.

• Tactics like "Employee of the Month" don't work because you only create one

winner and dozens of losers. The philosophy "When one of us wins, we all win" creates a team out of a staff.

• A good mentor/manager believes in publicly recognizing the contributions of his or her entire team by celebrating large and small successes and making the effort to mentor team members into positions requiring them to become leaders.

• Giving salary increases because employees have been with the company for a period of time isn't an effective tactic. Rewarding performance, large and small, is highly effective. The "Pay for Performance" practice leads to stronger teams because individuals realize they depend on their teammates to achieve success.

• Self-evaluation is an important part of mentoring. Wise mentors are more concerned with telling their charges how to do better rather than asking them what they think they're doing right.

It's been said, we learn best by teaching and teach best what we most need to learn. In that light, we become better mentors by being mentored. Have there been any great mentors in your life? What made them great? Understanding this will give a person a good foundation for mentoring and remind and individual how important mentors have been in their life and careers.

Dr. Goldsmith is quick to point out that mentoring is not therapy! It's normal for a Mentor/Manager to spend time dealing with their co-workers problems, but when those problems become emotional; you may feel (rightfully so) that you really don't want to deal with these kinds of problems. You may also feel that you are "out of your league". If a staff member's problems made you feel uncomfortable, it's a sign that you need to refer them to, or bring in, a professional counselor. After all, counseling is NOT in Your Job Description.

Although we all may have had to deal with unexpected emotions like tears, silence or outright anger, it really should not be part of your duties. What is in the Mentors/Manager's job description is having the ability and insight to know when to leave it to the pros.

Because Mentoring is becoming a large part of contemporary business culture, many consultants have added Executive Coaching to their repertoire. In addition, numerous psychotherapists (most with no business experience) have also become "Executive Coaches." Where Mentoring and Coaching are similar to each other, counseling is a completely different line of work. It involves dealing with people's emotions and helping to heal their neurosis. Just because someone calls himself or herself a coach, does not mean that they have the ability to counsel. Before you refer someone to counseling, make sure that the person they see has some appropriate training in psychology.

Mentors have a responsibility to the people who come to them for guidance. This responsibility is one of the benefits of being a mentor; it makes them better leaders. Understanding boundaries and limitations gives the Mentor a greater ability to help others. It also allows them to grow personally and professionally.

(Dr. Barton Goldsmith, Goldsmith Consulting; P.O. Box 4502, Westlake Village, CA 91361-4502; 866/522-7866; www.bartongoldsmith.com .)

Nonwovens Growth Continues

World-wide consumption of textile fibers in nonwoven fabrics reached 3.5 billion metric tons in 2001, according to a recently completed study by SRI Consulting. The resulting nonwoven fabrics were valued at over $14 billion. Between 1997 and 2001, world consumption of nonwoven fabrics grew an average of 11.2% annually.

For much of the past decade, solid growth in nonwovens occurred in the industrialized nations while double-digit growth occurred throughout the developing regions (predominantly Asia). Developing countries consumed 39% of all nonwoven goods produced worldwide in 2001, up from 10% in 1988.

In the US and Canada, hygiene applications, including diapers and adult incontinence products accounted for 25% of nonwoven fabric consumption in 2001. In Western Europe, hygiene applications also represented the largest market accounting for 36% of 2001 total consumption, while the Japanese medical and hygiene sector represented 30% of total consumption.

Numerous applications, including wiping cloths, geotextiles and filtration, account for the remaining materials, according to the SRI Consulting Report.

In these industrialized regions, demand for nonwovens is expected to increase between 3 and 5% annually over the next five years. Maturing product areas, the increasing use of wood pulp and some product enhancements will negatively impact textile fibber consumption, but new product innovations and growth in the newer applications will more than offset any decline.

The use of nonwovens in the developing countries should increase 10-12% annually from 2001 to 2006. Demand for nonwoven roll goods in many of these countries currently exceeds local capacity by 50% or more. Double-digit growth of nonwoven goods (particularly in the People's Republic of China) will be met by increased production by local manufacturers or foreign investors, but also with large amounts of imports, especially of nonwoven roll goods.

The United States and Western Europe have a similar profile in textile fibers consumed in the manufacture of nonwoven fabrics. Polypropylene has had a dominant position in the industry in both regions and will continue to lengthen its lead with estimated growth rates of 3.3% and 6.0%, respectively.

In Japan, polyester remains the primary nonwoven material owing to the greater availability of polyester resins, as indicated by the SRI Consulting Report. Polypropylene consumption in Japan is expected to increase 7% annually over the next five years, while consumption of polyester in webs is forecast to growth at 5% over the same time period. Thus, while polyester will keep its consumption lead through 2006, it will likely relinquish its position to polypropylene shortly thereafter.

For information: Fred Hajduk.650/859-3774; fhajduk@sric.sri.com . ***— INJ***

Press to return to the Table of Contents

TECHNOLOGY WATCH

Carbon Felts As Chemical Intermediates

Carbon felt is a porous needlepunch nonwoven fabric produced from carbon fibers. It is used for a variety of industrial purposes, especially insulation and filtration; in the latter application, use is often made of the highly adsorptive properties of carbon when it is activated, especially for picking up malodorous molecules.

A development has recently been reported where a carbon felt has been a key element in carrying out specialized combinatorial reactions that greatly simplify the type of R&D that is used to develop new pharmaceutical candidates. The inventors of this new technique indicate that this approach has distinct advantages in surface area, strength and solvent insensitivity over standard resins usually employed in combinatorial chemistry.

This new method has been described by researchers Estelle Coulon and Jean Pinson of the University of Paris (*J. Organic Chemistry*, 2002, 67, 8513-8518). They prepared carbon felt analogues in the form of disks by chemically modifying the surface of the fibers of the felt material using electrochemical reduction with appropriate chemical agents. The conductivity of the carbon felt was exploited to carry out this step. The carbon felt disks were then used to perform a variety of substitutions reactions typical to combinatorial chemistry synthesis.

Following the reaction, electrochemical cleavage was performed and the final product was released from the felt, available for further use and analysis. The simple removal of th carbon felt from the reaction medium after electrochemical release greatly simplifies the work-up of the reacted mixture to obtain the final product.

The authors have indicated that this simplified but flexible maneuver may substantially enlarge the horizon of chemical reactions that can be a part of combinatorial chemistry. Also, he authors believe that electrochemical cleavage from carbon felts should be applicable to a wide range of chemical bond types. This may open up a variety of opportunities for simplified synthetic techniques for pharmaceutical R&D and production.

The chemical modification of the surface of nonwoven webs is receiving an increasing amount of research & development effort in other arenas as well. Striking performance results have been obtained by low levels of surface modification of blood filtration webs used for leucocyte reduction. Leucocytes essentially comprise white blood cells that have surrounded bacteria, viruses and other blood contaminants to de-activate such blood "trash;" the result is a much higher quality and safer blood for transfusions. Most of the blood drawn from donors in the developed countries is now passed through such filters to remove these contaminants.

Surface chemical modifications of nonwovens, fibers and other polymer surfaces are being used and exploited in many other applications as well. The development of antibacterial treatments has been especially active. Work at MIT with various NBhexyl-PVP treatments has shown that a wide variety of solid synthetic polymer surfaces can be modified to provide antibacterial action. Surprisingly, the treatment is not effective on porous surfaces.

Cellulosic surfaces have also been treated to provide antibacterial activity. This research (at C. W. Post Campus of Long Island University and Queens College of the City University of New York) has involved activating the carbohydrate surface of the cellulosic materials by tosylation, and then displacing the tosylate groups with an amine reagent (DABCO) with an attached lipophilic alkyl chain. The DABCO treatment kills a wide range of bacterial on simple contact. It has been found useful for clothing and wound dressings. Since it involves a chemical attachment, it is not removed by laundering.

The potential ability to maintain surfaces, and hence materials, permanently antiseptic certainly has significant implications to nonwoven interests.

In a somewhat different but related vein, Bayer Chemicals in Europe has done some very R&D interesting work on coating the fiber surfaces of textiles with polyurethane microcapsules containing aromatherapy agents. The technology has focused on all textiles that undergo mechanical strain, such as clothing, carpets and upholstery fabrics. This is because the microcapsules rupture on pressure, movement or from contact with the skin and release the essences inside.

A variety of fragrances have been employed, especially those to increase the physical and psychological well-being of individuals. Also, "Bayscent Neutralizer" is offered, which provides and emanation that neutralizes unpleasant odors, such as perspiration and smoke, without masking the pleasant odors.

Certainly there is a lot of potential for further enhancement of nonwoven materials by affecting just the surface of the constituent fibers.

Trends, Trends, Trends

In maintaining a Technology Watch, it is necessary to continuously "search the horizon" and attempt to spot those small blips that represent a substantial change for the future. This includes the technical horizon, but also the social/cultural shifts that could transform the competitive landscape. For the researcher, this provides hints as to where the R&D efforts should focus.

According to a recent study from Young & Rubicam's Brand Futures Group, the most significant trends of the business world over the first decade of the 21st Century involves "an increase in the blurring between work and play, home and office, media and technology, and other once-compartmentalized spheres." Such shifts always lead to C&O, challenges and opportunities.

As revealed by this study, the top 8 trends shaping the decade will be as follows:

1. Generation blur equals new life/work styles for 30- and 40-somethings. Lifestage, rather than demographics, is now the most important criterion for market segmentation. Today, only 25% of U.S. households consist of a married couple with children. In the early 1970s, it was 45%. And 33% of U.S. heads of household are unmarried and childless, twice the figure in 1972.

2. Evolution from green to gold. It is no longer enough to "do no harm," the mantra of the past three decades. Now, a company or corporation is expected to be actively doing good. The consuming public is becoming more attuned to a company's "total corporate profile;" this includes such things as workplace practices, corporate good works and giving, ethical and governance standards, environmental ratings, and the like.

3. Search for Security and Privacy. The acceleration pace of life has increased the concern with security and privacy. The tragedy of September 11 greatly enhanced this feeling. The home is seen as not only a place to live, work, and play, but it is also a fortress. Privacy and associated elements are seen as very important.

4. No-Brow Culture. The downplaying of status and status symbols is becoming much more widespread. The increasing popularity of discount shopping, no-frills airlines, and the like has paralleled the rise of the anti-status consumer. Discount retailers have increased their dollar volume 19% since 1994, while department stores have lost 15% and apparel stores lost 7%. Some experts say there is now a two-tier market: Mass and Class.

5. Smells Like Respite. The stress and overload of modern life create the need for a respite. Candles and candle accessories lit up more than $2.1 billion in sales in 1998, a figure attributed to the growing popularity of scented candles and aromatherapy, a category that has taken off because it promises rest and relaxations.

6. "Glocal" Style. The consumer of the future is likely to assimilate global trends, while remaining loyal to his or her locality — become the glocal citizen. Tomorrow's mass-appeal brands will share three characteristics: global relevance, hyperlocal desirability (keep in mind that "hyperlocal" isn't just a question of geography — it's also about community, ethnicity, and state of mind); and strong ties to multiple niches. One manifestation of this element — hyperlocalizing international messages.

7. Globalization isn't Americanization. Trends travel two ways in today's world, not only from the US outward. As imports have increased over the past 20 years, ethnic flavors have been moving into the U.S. mainstream. In response, companies are turning their international operations into incubators for the next big domestic hit (some such "hits" have already occurred).

8. Cybershopping in the Down Times. As the Internet has become part of everyday life for millions, it has brought the rise of 24/7 consumption. Professional goods and services are increasingly "shopped" in cyberspace, and personal tasks, such as home decorating/improvements and clothes shopping, are most likely to be attended to online, in off-hours.

While this study emphasized and provided examples in the marketing and market product areas, these trends have widespread implications, even for nonwoven R&D. After all, many of the points and elements discussed in the study do have a bearing on products based on nonwoven fabrics.

Actions and Reactions

A Principle of physics says "For every action, there is an equal and opposite reaction." That may be a valid principle in human affairs, also.

The concept of "sustainability" has garnered much favor in many of quarters of the world. For some, this translates into "Use but not Abuse" of the worldly environment. For others, it means harkening back to the old ways. For still others, it carries a strong message of using only those items and resources that can be fully replaced and replenished.

The current interest in the biodegradability of nonwoven raw materials is one aspect of this movement. Proponents don't always agree what form they would like a material to be degraded into, but there is generally a consensus that it somehow must disappear.

For some, this means safely flushing a product down the toilet. For others it means converting a product into mulch or some other basic material that can somehow be used to solve the food shortage.

To a growing segment of the population, sustainability equates to using raw materials that can be replenished. Hence the growing interest in sourcing chemicals from agricultural and similar product sources.

Recycling of components, used products and discarded materials is a very visible and demonstrable aspect of this overall concern. For some people who have been close to this approach, the alchemists goal of converting lead into gold was no more difficult that finding an economic outlet for volumes of recycled materials. As an example, many paper recycling plants have been abandoned because there was no suitable market for the output.

Now for some "reactions."

Some prominent recycling experts from Europe are now contending that

burning cardboard, plastics and food waste is better for the environment and the economy than recycling!!

The amazing aspect of this reversal is that it is coming from Sweden, a country that has been in the forefront of concern for the environment and the promotion of advanced approaches for recycling waste. One of these five new and authoritative voices belongs to the former director-general of the government's environmental protection agency. Another is the former campaign manager for "Keep Sweden Tidy," and the former managing directors of three waste-collection companies. Their views were published recently in a major Swedish newspaper.

These views were echoed by a growing group of British local authorities, who have drawn up plans to build up to 50 incinerators in the U.K., in an attempt to tackle a growing waste mountain and cut the amount of garbage going to landfills. One deputy council leader in southern England said that "It's time for the recycling myth to be exploded."

There must be a selectively in promoting materials for recycling, a point on which these proponents agree. As one pointed out, collecting household cartons is very unprofitable. Recycled bottles cost glass companies twice as much as the traditional raw materials. Recycling a lot of plastic waste is uneconomic.

The Swedes stressed that the "protection of the environment can mean economic sacrifices, but to maintain the credibility of environmental politics, the environmental gains must be worth the sacrifice."

The technology of incineration has been well advanced in Japan. Some of that technology is now being studies in other areas, where it may make good sense.

Very possibly, the concept of "sustainability" should be applied to "recycling." Here again, there may be significant implications for the nonwoven industry. ***— INJ***

Comparison of ASTM 5035 and CEN 29073-3, Strip Tensile Test Methods

(This article is a continuation of the Guest Editorial from INDA Technical Director Cos Camelio that appears on page 2)

The nonwovens industry is a global industry. Many companies are doing business in North America, Europe and other parts of the world. This means that their labs in the different regions are probably using different test methods to measure the same property. This makes it difficult to compare test results from region to region.

Strip tensile is one of the properties where two different tests could be used depending on the region of the world. ASTM 5035 most likely is used in North America and CEN 29073-3 is used in Europe. At first glance, there are six differences between the two methods. However, there are three that really stand out:

	ASTM 5035	**CEN 29073-3**
Rate of extension (cross head speed)	300mm/min	100mm/min
Sample size	25mm by 150mm 50mm by 150mm*	50mm by 200mm
Gage length	75mm	200mm

**ASTM has the option of using a 50mm sample width*

INDA's STM decided to conduct a comparison of the two methods using these three differences as the variables. Several round robin tests among members' labs resulted in considerable variability and proved little. A plan was devised to eliminate as many of the variables inherent in round robin testing. The testing would be done on one piece of test equipment, at one location, using one technician and completed in one day. Each test procedure would be followed as closely as possible. Testing would be conducted on four fabric samples, two nonwoven and two woven. The variables would include three sample dimensions (25mm by 150mm, 50mm by 150mm and 50mm by 250mm), two crosshead speeds (100mm/min and 300mm/min) and two gage lengths (75mm and 200mm). With a sample size of 20, this would result in over 500 individual tests.

There was an extensive amount of information gleaned from this study. However, there were two key findings. First of all, if both methods are followed exactly and ASTM 5035 is conducted with the optional 50mm wide sample, both test yield the same results! There is no significant difference. This means that an international company could compare tensile results from both methods as long as 50mm wide samples are used for both.

The other piece of knowledge gained from this experience has to do with round robins. There are a considerable number of variables that can creep into these tests such as the test equipment being used, the load cell size, the software package being used, lab conditions, conditioning procedures for the samples and deviations to the test procedure itself. In addition to all these variables, one could add calibration history of the equipment and sample preparation.

In summary, ASTM 5035 and CEN 29073-3 will give the same results if each method is followed precisely and ASTM 5035 is conducted using the 50mm sample width. Labs should also consider auditing testing procedures in order to eliminate short cuts that can creep into a procedure over time.

Press to return to the Table of Contents

WORLD OF ASSOCIATIONS

Textile Institute World Conference

The Textile Institute, the major science and technology society covering all aspects of the textile industry headquartered in England, is again organizing a World Conference, their 83rd such conference. The theme for this World Conference is "Quality Textiles for Quality Life."

This Conference is being organized under the auspices of the College of Textiles Donghua Univeristy (formerly China Textiles University) of Shanghai, Peoples Republic of China.

It is scheduled for May 23-27, 2004 in Shanghai.

The guiding theme of the conference will be that of improvement — How can the quality of life be improved through advancements in our knowledge of textiles and apparel, the industries that produce them and the industries they serve?

Areas that will be highlighted during the course of the conference will include the following:

- Polymer and Fiber Materials
- Textile Process and Properties
- Clothing Science & Technology
- Technical Textiles
- Machinery for Textiles and Fashions
- Trade, Economics, Management and Education
- IT Application in Apparel & Textiles
- Globalization and Distribution of Apparel & Textiles
- Design, Innovation, Color, Pattern, Aesthetics, Fashion and Style
- History of Textiles and Historical Textiles.

The details for the conference are being handled by the 83rd Textile Institute World Conference Secretariat. For further information, contact 83rd TIWC Secretariat at the College of Textiles, Donghua University, Shanghai 200051, P. R. China; Fax: 86-21/621-93061; ti04shanghai@dhu.edu.cn ; http://www.dhu.edu.cn/83tiwc.htm .

Another item of current interest to the textile industry also comes from The Textile Institute. This is related to the books that are generated by the Institute. Such volumes are published for them by Woodhead Publishing Ltd. in England.

Woodhead Publishing has recently released a new catalog featuring such books, entitled "Textile Technology - 2003 Catalog." The range of subjects

New INDA Publications

INDA, Association of the Nonwoven Fabrics Industry, has just announced the availability of their new edition of their popular "International Directory for the Nonwovens Industry, Volume XVI."

With this latest release, the Directory has grown to the point that it is five times larger than the previous edition. Also, it is a far cry from the first edition put out by INDA. It was a paper bound volume of about 70 pages, and it covered only the most prominent members of the industry. But, like a lot of things in those day (about 1969), it was a beginning.

The new directory makes it very convenient to locate buyers and sellers of nonwoven products, along with a complete compilation of companies offering chemical supplies and auxiliaries, machinery and equipment, services of a wide variety, convertors, associations, trade press, universities and research institutes, consultants and virtually every other need encountered within the industry.

Over 12,000 personal contacts are provided, with complete information on access. In excess of 4,000 companies with their product listings are included. This listing covers over 95 countries, and 500 product types. Small wonder that the INDA staff, which devoted more than 1,500 hours to the compilation, is proud of this product.

Along with the print copy of the Directory, purchase includes access to INDA's on-line version of the Directory, which features daily updates, to provide the industry with truly current information, in order to deal with the the fast-moving changes that are characterize this industry.

The cost of the Directory is $445 for INDA members, and $625 for non-members.

In addition to the new edition of the Directory, INDA is also offering new basic manuals on the following topics:

- A Hydroentangling Technology Primer
- Nonwovens Glossary

These items, along with papers from recent conferences, are also available from the INDA office.

INDA is now also offering a subscription to its Standard Test Methods as they are issued (about on a quarterly basis). Previously, the updates to the INDA Standard Test Methods manual were sold individually. With this subscription service, the up-dates will be sent automatically to all subscribers.

The test methods are now prepared in both a hard copy (paper) and a CD electronic copy; they also include data on ASTM, IST and EDANA/INDA Harmonized Methods, and a global comparison of various test methods of interest.

For purchase and additional information, contact: INDA, P.O. Box 1288, Cary, NC; Tel.: 919/233-1210; Fax: 919/233-1282; www.inda.org .

covered by this catalog include technical textiles, fiber science, natural fibers and cellulose, textile production, design and management, and environmental issues.

Woodhead Publishing Ltd., Cambridge, U.K.; Tel.: 44+122/3889-1358: www.woodhead-publishing.com .

National Textile Center Seeks New Executive Director

The National Textile Center (NTC) is a consortium of eight universities that are deeply engaged in textile research. These eight core universities include: Auburn, Clemson, Cornell, Georgia Tech, Philadelphia, North Carolina State, California-Davis and Massachusetts-Dartmouth. Founded in 1990, the NTC is the partnership by which these universities collaborate to conduct academic research programs of interest to the domestic Fiber/Textile/Fiber Products/Retail (FTFPR) Industrial Complex. The NTC mission is to enhance the FTFPR knowledge base so that the complex remains globally competitive.

For the past 11 years, NTC has been led by its original Executive Director, Dr. Joe Cunning. Under his guidance, NTC evolved from an ambitious concept into a functioning, effective research organization.

Dr. Fred Cook, Professor of Textile & Fiber Engineering at Georgia Tech and chair of the NTC Operating Board said upon responding to the retirement: "We sincerely thank Dr. Cunning for his superb leadership over the last 11 years. He has been instrumental in NTC's growth from four to eight university members and increasing its annual budget from $7 million to $10 million. While he will be greatly missed, we honor his desire to spend more time with his family and other endeavors. He has agreed to remain a consultant to the NTC."

With this retirement, NTC is now seeking a new Executive Director. The Executive Director manages the consortium and reports to the University-appointed Operating Board. Each consortium university appoints one Board member. This position also represents the NTC and its mission to the United States Government, the FTFPR industry and the global industry trade press. Further details in the Job Description for the Executive Director is on the NTC website (www.ntcresearch.org).

The NTC operates a "virtual office," in that the Executive Director and all employees are independent contractors. This management system has enabled the NTC to keep overhead costs very low and yet maintain a focus to conducts its mission. The NTC is 100% financed by annual grants from the U. S., administered by the Department of Commerce.

New Technical Textile Journal

A new journal devoted to the technology of technical and industrial textiles was inaugurated at the end of 2002.

"Technical Textile Technology, The Forum for Performance Textiles and Nonwovens" (T3) is being published by International Media Group, Inc. (7421 Carmet Executive Park Drive, Suite 105, Charlotte, NC 28226, USA; Tel.: 704/544-1969; Fax: 704/544-6559; www.t3-online.com). This same group is the publisher of *International Fiber Journal*, a publication devoted to the coverage of the man-made fiber industry, worldwide; but with a focus on fibers and yarns. The new journal will expand that focus to the variety and complexity of the end uses and applications of the fibers and yarns.

The publisher of the new journal is Mr. Charles Heschmeyer, who also serves as the President of the International Media Group. Mr. Edward C. Gregor, a long-time participant in the filtration and related technical textile industry, serves as the Editorial Consultant. Several of the members of the Editorial Department for T3 are also long-time observers of various phase and locations of the technical textile industry.

The initial issue (November 2002) of the publication had departments titled as following:

- Exhibition Review
- Market Trends
- Fiber Engineering
- Special Report: Military and Defense
- Special Report: Reinforcement and Structural
- New Products
- Research and Development
- Competitive Technology
- Nonwovens
- Associations
- Exhibitions and Seminars.

As indicated by the Publisher, AT3 is starting life as a North American, and principally a USA, publication. It will be published on a quarterly basis.— ***INJ***

Press to return to the Table of Contents

NONWOVENS WEB

Technology Transfer Web Sites

The previous issue of the *International Nonwovens Journal* carried a discussion of the activities at various universities to convert research developments coming from staff members into commercial realities. Earlier issues of INJ have also described various avenues and resources for technology transfer.

There has been a paradigm shift on the part of many universities to make their technology transfer efforts more effective and more focused. The technology transfer office on many campuses have been organized primarily to offer aid to researchers when called upon. A much more positive effort at licensing has now become much more apparent, and the Worldwide Web is becoming an integral part of that effort.

Some of the universities are banding together to cover specific areas more efficiently. Thus, Harvard University has established their "Biomedical Community Technology Gateway," as an umbrella for a number of universities to jointly promote their biomedical research to the various parts of the biomedical industry. This has involved more direct and aggressive marketing, employing some advanced and not so traditional methods.

Several universities have joined their technology transfer efforts to a New York City company organized for outsourcing their marketing efforts. This company, University Ventures Inc. has established a web site to centralize and establish a repository for these various fragmented university efforts. Current users of this site include universities from all over the world.

As might be surmised, the subject of the technologies cataloged on such a web site is very broad, as broad as the interests of the research staff at a typical university. However, various means are available for focusing on specific interests, and this avenue has opened up numerous network contacts of value to both parties.

While not all of the web sites cater especially to university research, some of the more important sites for Technology Transfer include the following:

- University Ventures Inc., www.uventures.com
- Yet2.com, www.yet2.com
- TechEx, www.techex.com
- Patent & License Exchange Inc., www.pl-x.com
- PatentAuction, www.patentauction.com
- TechExchange Online, www.teonline.com
- Delphion Intellectual Prop. Network, www.patents.ibm.com
- Knowledge Express, www.knowledgeexpress.com
- PatentPost, www.patentpost.com
- ChemicalPartners, www.chemicalpartners.com
- BrainSupply, www.brainsupply.com
- Knexa, www.knexa.com
- Cool License, www.coollicense.com
- IP Marketplace, www.lipmarketplace.com
- International Technology Exchange, www.technologyxchange.com
- Thinkmart, www.thinkmart.com
- Technology Connect, www.technologyconnect.com
- HelloBrain, www.hellobrain.com
- QX Health, www.qxhealth.com
- Pharmalicensing, www. pharmalicensing.com

Here's to Technology Searching and Transfer — Good Luck!

Dealing With Spam

Spam is unsolicited bulk E-mail. Anyone who uses the Internet and maintains an Internet address has certainly encountered spam, as it affects everyone on the net. There is a lot more of it these days, as there are more individuals on-line than ever before. Also, spammers are finding new, fraudulent and illegal ways to get spam into as many inboxes as possible. Some technology is allowing spammers to "guess" what your E-mail is, in order to send you spam. They can even create fake E-mail addresses to send you spam and hide their identity.

Most ISPs provide means to block addresses and domain names from sending you spam. Also, they have taken many spammers to court. Even tougher bipartisan legislation is being considered at the Federal and State levels to control the flood and put spammers out of business.

The commercial ISPs are fighting a continual battle to block spam E-mail. AOL alone estimates that its technology blocks up to 960 million spam E-mails every day. They estimate that this prevents 22 unwanted E-mails getting to each account every day.

So how come my box has over a hundred spam messages in just a couple of days? More important, what can I do about it?

First, report it. Most ISPs have a simple means to report spamming, which helps to identify and stop a vast number of spam sources. Also, most ISPs have a flexible, customizable Mail Control system that may help reduce the number in your mail box.

It is also important to guard your E-mail address and do not give it out unnecessarily. Also, create a unique password to your account and never give it to anyone. A favorite spammer's tactic is to hijack an account and then

use it to send out thousands of spam E-mails.

Some experts also recommend that you never respond to spam by clicking on the "Unsubscribe" link in the junk E-mail, as that generally doesn't work, and it confirms your address so that you may get more of the same.

Also, some ISPs allow several screen names; this permits a use to create a special screen name to be used just for public on-line areas and surfing the Internet, where spammers often go to gather E-mail addresses.

Keep up the fight!!

New .edu Sites

For the past several years an ".edu" website meant that this site was operated by a four-year college or university in the U.S. However, in 2001, a university consortium took over the management of the sites using this suffix. A decision was then made to expand eligibility to community colleges and some other commercial universities that were accredited by the same regional groups as the four-year institutions.

The university consortium, called Educause, subsequently recommended further changes in this suffix to include schools that were approved by specialty accreditation organizations which had been recognized by the Department of Education. These "specialty organizations" included such utilitarian pursuits as midwifery, funeral services, beauty colleges, theological, distance-learning and other institutions.

While a public-comment period was employed, Educause indicated that about 95% of the responses were in support of the change. Consequently, the change has been adopted, and will likely go into effect in April 2003.

There are about 7,500 .edu domain names that have been assigned to about 6,000 institutions. With this and other changes, a domain's name will have to be examined a little more carefully in the future. ***— INJ***

Press to return to the Table of Contents

NONWOVENS PATENTS

Top Patenting Companies

For the tenth consecutive year, the US company IBM has generated more US Patents in the past year than any other company. In 2002, four U.S. corporations are included on the list of Top Ten patenting organizations, up from two US companies in 2001.

Each year, the US Patent and Trademark Office (USPTO) announces the Top Ten patenting companies. For the year 2002, the USPTO preliminary data on the Top Ten patenting companies are shown in the box below.

In the past decade, IBM inventors have received a record 22,357 patents, besting the next closest company, Canon, by nearly 7,000 patents. During this period, IBM has generated more patents than 10 of the largest US "intelligence companies" combined, including Hewlett-Packard/Compaq, Intel, Sun, Microsoft, Dell, Apple, EMC, Oracle, and EDS. IBM inventors were also listed on 45 additional patents awarded to other primary assignees, for a total of 3,333 US patents to IBM researchers in 2002.

As might be expected, all of the companies in the Top Ten List are involved in computers, electronics and similar activities. As further evidence of the prowess of IBM in patents and technology, the company recently launched their "On Demand Innovation Services," applying IBM's top researchers to real-world customer problems. Also, the company has introduced a patent consulting service to assist customers in managing and exploiting their own patent portfolios.

With a typical technical patent prosecution costing an average of about $50,000 in direct costs, this represents a significant investment in IP patenting by IBM, over $160 million. This certainly highlights the value of such Intellectual Property.

While this method of counting only US Patents and not foreign issues has certain limitations, it does indicate some important trends. It is noteworthy in this regard that preliminary accounting indicates that Kimberly Clark Corporation remained the leader in obtaining US patents on nonwoven processing in 2002; their total patents issued again exceeded 20% of all such nonwoven processing patents granted by the USPTO in 2002.

European Patent Rules Change

A patent applicant may at times wish to accelerate or to delay the issuance of the final granting of a patent. Acceleration may be desirable when infringement possibilities exist. A delay may be the appropriate strategy when it is desired to extent the patent life as far as possible.

It is now possible to choose a processing provision to extend the prosecution period or to select an accelerated provision to delay it in the European Patent Office (EPO).

An additional 10 weeks to five

TOP TEN PATENTING COMPANIES - 2002

Ranking	No. of Patents	Company	2001 Ranking	Patents in 2001
1	3,288	IBM	1	3,411
2	1,893	Canon Kabushiki Kaisha	3	1,877
3	1,833	Micron Technology, Inc.	4	1,643
4	1,821	NEC Corporation	2	1,953
5	1,602	Hitachi, Ltd.	8	1,271
6	1,544	Matsushita Electric Industrial	6	1,440
7	1,434	Sony Corporation	7	1, 363
8	1,416	General Electric Company	13	1,107
9	1,385	Hewlett-Packard Company	15 *	978
10	1,373	Mitsubishi Denki Kabushiki Kaisha	9	1,184

** The USPTO began reporting the combined patent totals of Hewlett-Packard and Compaq in January 2003. Calendar year counts for 2002 for Hewlett-Packard Company include 159 patents issued to Compaq Computer Corporation, Inc. and 165 patents issued to Compaq Information Technologies Group, L.P.*

months addition to the process-time may be added by taking advantage of the EPO office allowance to extend the deadline for response to office actions by the applicant. This may involve an additional processing fee of about $75, but it may be well worth this amount to have additional time to collect data or for other reasons.

On the other side, a recent EPO rule change permits accelerated prosecution of an application, and this can be done without public notice, often a helpful provision. The Program for Accelerated Prosecution of European Patent Applications (PACE) can speed up such items as search reports and examinations, as long as the applicant responds to such office actions within a four-month period.

In the USPTO, such arrangements are a little more difficult. Acceleration can be achieved by making a patent application "special;" however, the rules for achieving this status are somewhat tricky and a little difficult to meet. Issuance of a granted application can be delayed by six months, simply by taking advantage of the response period for such issuance. It is important to consider these various options and strategies in the various phases of the prosecution of an application.

University Experimental-Use Exception Narrowed

In years past, universities and their researchers enjoyed freedom from potential patent infringement under the "experimental-use exception." The thinking was that universities were exempt from patent infringement under this exception merely because the university's research was not for profit. This was the basis for a ruling put forth by a North Carolina District Court in a case where Duke University was sued for alleged infringement.

However, the U.S. Court of Appeals for the Federal Circuit ruled that the District Court erred in its ruling and sent the case back for re-examination with a more limited interpretation of the experimental-use concept (Madey v. Duke University). The higher court stated in its ruling that academic research in keeping with the University's legitimate business (attracting grants, students and faculty, for example) is not exempt from patent infringement under the experimental-use exception. This Appellate Court ruling indicated that the exception applies only to research that is "used for amusement, to satisfy idle curiosity or for strictly philosophical inquiry;" if the objective of the research goes beyond those narrow limits, the research activities of a University or an institute are not different from those of a corporation that conducts research for an obvious profit.

This ruling seems to limit the scope of the experimental-use exception to small-scale studies such as those conducted on an isolated or random experimental basis. A patent holder would not likely be interested in such occasional use, but a university may need to obtain licenses for patented technology or instruments they use regularly in their research.

****

RECENT NONWOVEN PATENTS

Patterned Spunlace Fabric of Improved Durability

A method is disclosed for producing a spunlace fabric with an enhanced pattern or image produced therein, which also has desirable softness and drapeability, as well as requisite mechanical properties for use in "top-of-the-bed" applications, such as comforters, pillows, dust ruffles, and the like.

A precursor web is produced from a fibrous matrix of staple length fibers, preferably by cross-lapping carded webs. The precursor web can also be produced from continuous filament webs. It is preferred that the precursor web be subjected to pre-entangling on a foraminous forming surface prior to imaging and patterning. This pre-entangling is done to a modest degree of entanglement only.

The pre-entangled web is then advanced to an image transfer device, which may comprise a drum-like apparatus which is rotatable with respect to one or more hydroentangling manifolds.

The precursor web is advanced onto the imaging or patterning surface of the image transfer device so that the web moves together with the imaging surface at the same speed. Advancement of the precursor web in this fashion acts to minimize tension within the web. Minimization of tension in the precursor web acts to desirably enhance imaging and patterning of the precursor web on the image transfer device. Enhanced fiber entanglement is achieved, with resultant improvement in physical properties of the fabric being formed. Z-direction entanglement is particularly improved.

Full hydroentanglement of the precursor web is effected under these conditions to form the imaged or patterned fabric.

Following hydroentanglement, the imaged and patterned fabric may be subjected to one or more of a variety of post-entanglement treatments. Such treatments may include application of a polymeric binder composition, mechanical compacting, application of a flame-retardant composition, and similar processes.

A polyester/nylon fiber blend has been found to desirably yield soft fabric handle and good fabric drapeability, while providing the necessary resistance to tearing and abrasion, and a high degree of launderability, thus permitting home laundering.

U.S. Patent 6,502,288 (January 7, 2003); filed February 9, 2001. "Imaged nonwoven fabrics." Assignee: Polymer Group, Inc. (North Charleston, SC). Inventors: Samuel K. Black, Charles Keith Curtis, Cheryl L. Carlson.

Laminated Composite

A laminated composite suitable for use in medical products such as tapes and wraps is disclosed. The composite

includes (1) a first nonwoven fiber layer, (2) an elastic layer, (3) a melt blown adhesive fiber layer, and (4) a second nonwoven fiber layer. A scrim layer, serving as a deadstop, or stretch limit to prevent over-stretching, can also be included in the laminate.

The nonwoven fiber layer(s) and/or the scrim layer form suitable loops for a hook-and-loop fastening system. The scrim layer in some embodiments is employed to make the composite finger-tearable. The melt blown adhesive layer, nonwoven web layers, scrim layer and elastic layer form a breathable, porous elastic composite.

The invention provides laminated elastic composites that include an elastic layer and a layer of fibers that are melt blown onto the elastic layer in an in-line process. The elastic layer includes a layer of substantially parallel, spaced apart elastic filaments oriented in the machine direction.

In a preferred embodiment, two nonwoven cover webs are provided, and the laminate composite has a configuration generally represented as first nonwoven/scrim layer/elastic layer/meltblown fiber layer/second nonwoven.

The disclosure also provides a method of making the elastic laminate composites. The production line comprises an apparatus that includes a melt-blowing die, a collector drum for the adhesive meltblown web, a roll upstream from the die for dispensing a continuous length of a first nonwoven fiber web, a roll for dispensing a layer of substantially parallel elastomeric fibers upstream from the die, a roll for dispensing the second nonwoven web downstream from the die, a calender roll that forms a nip with the collector drum for thermally bonding the composite, and a winder roll for collecting the elastic composite after thermal bonding is complete. An additional roll for placing the scrim layer into the composite when that type of structure is desire, is positioned in the in-line process line so that the scrim is placed between the elastic layer and the nonwoven layer.

The elastic composites of the invention are breathable, soft, strong and economical. Because of their unique combination of properties, they are suited for use in many products including medical products and consumer products. Medical products that may be improved or enhanced by incorporating the elastic composites of the invention include adhesive tapes, cohesive tapes, bandages and dressings, wraps and surgical drapes, including incise drapes which are adhered to the skin surrounding a surgical incision. Appropriate consumer applications for the elastic composites disclosed herein include diaper tapes, diaper side panels and elastic utility tapes.

U.S. Patent 6,503,855 (January 7, 2003); filed November 19, 1999. "Laminated composites." Assignee: 3M Innovative Properties Company (St. Paul, MN). Inventors: Robert H. Menzies, Jason L. Edgar; Scott J. Tuman, David L. Seidel, Robert J. Maki, John E. Riedel, Eugene G. Joseph, Leon Levitt, Brandon T. Berg.

Acquisition Layer From Spread Tow Web

The object of the present invention is to provide a method of producing a fibrous material layer for a disposable sanitary protection product such as a diaper, a sanitary napkin, an adult incontinence product or the like. The fibrous material layer has a high acquisition rate for liquid, also for repeated wettings; it further has a high strength and abrasion resistance, excellent comfort, all of which makes it an excellent acquisition layer under a topsheet. .

The process involves taking at least one bundle of continuous filaments (so-called tow), which is opened and the filaments are separated and spread out evenly into a layer having the desired fiber distribution; following spreading of the filaments, the fibrous layer is bonded in points, spots or lines in a specific bonding pattern; the pattern leaves much of the filaments substantially unbonded to each other except at the bonded zone; this intermittent bonding provides drapeability and textile hand

Crimped or curled continuous filaments are preferred for the process, since they provide a very open and lofty structure. The filaments in the tow can be of any suitable material such as polyethylene, polypropylene, polyamide, polyester, polylactide, polyvinyl acetate, cellulose acetate, regenerated cellulose such as viscose rayon. Also, the filaments can be of the bicomponent type, with a skin of a thermoplastic polymer having a lower melting point and a core of the filament consisting of a polymer having a higher melting point.

Especially preferred are bicomponent filaments having a high resiliency, such as polyethylene terephthalate, a copolyester and polypropylene filaments. The filament thickness is preferably in the range of 2-15 dtex for an acquisition layer.

In the manufacturing process the filament tow is opened in special opening equipment and spread out into an even layer. This spread tow is led through an air ejector, which blows air into the material web substantially in the longitudinal direction. This step of "through-air blowing" is important for achieving the desired volume and loft, along with web evenness. .

The layer of the spread tow is then fed into a ultrasonic bonding station with an ultrasonic horn and a patterned anvil roll. The initial pattern can be the macropattern, generally with short lateral lines offset in the longitudinal direction. This provides excellent cross direction strength, while the unbonded filaments convey softness and textile hand to the web.

In addition to the macropattern, the web is provided with a micropattern, an uneven or grooved surface bonding to supplement the macropattern bonding. By use of the micropattern, the total welding surface is divided in smaller areas, so there is less material to melt; as a consequence, the micropattern makes it possible to weld at higher speeds. This technique also makes it possible to weld an uneven material

web, i.e., in which the material thickness varies across the machine direction.

It is also possible to use other types of thermal bonding methods, such as point emboss calender bonding, laser bonding, or even waterjet bonding or needlepunch bonding.

U.S. Patent 6,511,566 (January 28, 2003); filed December 3, 1998. "Method of producing a fibrous material layer." Assignee: SCA Hygiene Products AB (Gothenberg, Sweden). Inventors: Peter Wessel, Urban Nilsson, Kent Edgren, Jose-Maria Mansisidor, Dragoljub Kustrimovic.

Ultrasonic Bonding Apparatus and Methods

This invention discloses an apparatus and methods for creating intermittent ultrasonic bonds in a nonwoven fabric advanced into a roll nip. The unbonded fiber web can be up to about 0.25 inch thick.

The apparatus comprises a frame, anvil support apparatus supporting an anvil, and horn support apparatus supporting an ultrasonic horn. The ultrasonic horn and anvil are mounted and configured such that the ultrasonic horn and anvil can be brought together to define the nip. The frame, anvil support apparatus, and horn support apparatus collectively are sufficiently rigid that the horn and anvil can be brought together with a nip tolerance of about 0.000 to about 0.008 inch at a bonding zone, while providing sufficient nip pressure to develop ultrasonic bonds in the fiber web passing through the nip.

The system comprises bringing a back-up roll, mounted above the ultrasonic horn, into engagement with the ultrasonic horn, to directly support the horn. Two support rolls are used to releasably support opposing sides of the outer surface of the ultrasonic horn, preferably below the axis of the horn, whereby the support rolls can be used to lift the horn into engagement with the back-up roll.

U.S. Patent 6,517,650 (February 11, 2003); filed November 30, 2000. "Ultrasonic bonding apparatus and methods." Assignee: Kimberly-Clark Worldwide, Inc. (Neenah, WI). Inventors: Jack Lee Couillard, Kent William Abel, Joseph Daniel Coenen, Michael Lee Lohoff, Robin Kurt Nason, Dan James Sorensen.

Synthetic Staple Fiber/Woodpulp Spunlace Composite

This invention is directed to a method of making a composite nonwoven fabric which entails integration of a staple length synthetic fiber web with a web of cellulosic woodpulp fiber material.

In order to abate loss of cellulosic woodpulp fiber material during the hydroentanglement stage, the synthetic fiber web is first subjected to a partial hydroentanglement. This partial hydroentanglement acts to integrate somewhat the staple length synthetic fibers, prior to introduction of the woodpulp material.

The preferred synthetic fiber web consists of 0.55 osy airlaid PET fiber web combined with a 0.35 osy carded PET fiber web (PET fiber of 1.5 dpf and 1.5-inch cut length). The airlaid and carded fiber webs are pre-entangled on a rotary drum unit, to give a partially entangled web of about 1.0 osy. This partially entangled synthetic web was then transferred on to a belt entangler stage of the spunlace production line.

A cellulosic fiber web is provided in the form of a commercially available tissue (H431XL, 31# per ream paper, commercially available from Crown Vantage); the cellulosic fiber web is juxtaposed on top of the partially entangled synthetic fiber web, and the two layers are subjected to waterjet entanglement on the belt unit.

The integrated synthetic fiber and woodpulp fiber webs are then led about a spunlace entangling drum 22, which was covered by a 22x23 bronze flat warp wire (Albany International). Reduced-pressure liquid streams are then directed against the opposite surface (PET-rich side) of the juxtaposed webs.

Compared to previous commercial processing, the process of the present invention uses less impact energy, along with slightly higher liquid flow rates in order to achieve the desired fiber integration, while minimizing loss of the cellulosic fibers during manufacture. The inventors indicated that they believe the lower impact energies of the present invention result in less fiber fracture, with the higher flow rates offsetting the need for higher impact energies. Nevertheless, sufficient energy is inputted to provide the resultant nonwoven fabric with the desired physical characteristics, such as tensile strength, abrasion resistance and other desirable performance properties.

The composite nonwoven fabric resulting from this invention is particularly suited for medical applications, such as for use as disposable medical gowns. The present fabric is also well-suited for use as disposable wipes, such as industrial applications, such as in clean rooms or the like, by virtue of the low-linting characteristics of the fabric.

U.S. Patent 6,516,502 (February 11, 2003); filed March 12, 2002. "Composite nonwoven fabric." Assignee: Polymer Group, Inc. (North Charleston, SC). Inventor: Ralph A. Moody.

Binder with Dual Crosslinkable Functionality

This patent describes a latex binder with dual crosslinkable functionality that produce high performance nonwoven webs by bonding synthetic fiber based webs or webs comprising a blend of synthetic fibers and cellulosic fibers with the aqueous polymeric binders. The nonwoven fabrics exhibit excellent performance in a diaper topsheet, as they will allow liquid to transport through the web to an absorbent web below and the topsheet remains dry to the touch.

The aqueous polymeric binders used to form the high performance webs of

this invention have two functionalities copolymerized into the polymeric backbone — a acetoacetate moiety and a carboxylic acid moiety. Dual crosslinkability is effected by adding a polyfunctional compound capable of reacting with the acetoacetate moiety and adding another polyfunctional compound capable of reacting with the carboxylic acid functionality.

A polyfunctional compound capable of reacting with the acetoacetate moiety is a polyaldehyde, preferably a dialdehyde such as glyoxal or glutaraldehyde. A polyfunctional compound capable of reacting with the carboxyl functionality is a polyaziridine functional compound.

There are significant advantages to using a dual crosslinkable polymeric emulsions described in the patent, which include:

• an ability to effect a low temperature cure sufficient to approach target performance requirements as currently achieved by thermally activated systems;

• an ability to form synthetic based nonwoven fabrics with unexpected excellent topsheet acquisition properties; i.e., properties that render the fabrics dry to touch when exposed to liquids.

U.S. Patent 6,506,696 (January 14, 2003); filed March 26, 2001. "High performance synthetic nonwovens using polymers having dual crosslinkable functionality." Assignee: Air Products Polymers, L.P. (Allentown, PA). Inventors: Joel Erwin Goldstein, Ronald Joseph Pangrazi. ***— INJ***

Press to return to the Table of Contents

NONWOVENS CALENDAR

March 2003

Mar. 3-6, 2003. Technology Transfer Conference & Expo. McCormick Place, Chicago, IL. For more information, contact: Mr. Michael Driscoll, Reed Exhibitions, 383 Main Avenue, Norwalk, CT 06851; Tel.: 800/840-5599, ext. 5957. Internet: www.ttconference.com .

Mar. 6-8, 2003. Western Technical Fabrics Expo. Oakland Marriott City Center, Oakland, CA. For further information, contact: Jill Rutledge, IFAI, Roseville, MN; Tel.: 651/225-6981: Fax: 651/631-9334. E-mail: jmrutledge@ifai.com . Internet: www.ifai.com .

Mar. 9-14, 2003. Pittcon 2003, conference and exhibition on analytical chemistry and applied spectroscopy. Orlando, Florida. For further information, contact: Pittcon 2003 Conference, Tel.: 412/825-3220. Internet: www.pittcon.org .

Mar. 13-15, 2003. IFAI Canada Expo 2003. Renaissance Montreal Hotel, Montreal, Canada. Exposition for specialty fabric industry. For more information, contact: Rick Kershaw, IFAI, Roseville, MN; Tel.: 651/225-6920: Fax: 651/631-9334. Internet: www.ifai.com .

Mar 16-19, 2003. ASTM D13 Textile Committee Meeting. Westin Crown Center, Kansas City, MO. Annual Committee meeting for D13. For more information, contact: Maxine Topping, ASTM International, West Conshohocken, PA; Tel.: 610/8 32-9500; Fax: 610/832-9555. Internet: www.astm.org .

April 2003

Apr. 8-10, 2003. Techtextil Frankfurt. Frankfurt Fairs, Frankfurt, Germany. For more information, contact: Messe Frankfurt GmbH, Frankfurt am Main, Germany; Tel.: 49+69/7575-6712; Fax: 49+69/7575-6541; E-mail: techtextil@messefrankfurt.com Internet: www.techtextil.de .

Apr. 14-17, 2003. CMM International. McCormick Place, Chicago, IL. The annual Converting Machinery/Materials Conference and Exposition. For more information, contact: Paperloop, Inc., 1250 Broadway, Suite1903, New York, NY 10001; Tel.: 212/268-4160; Fax: 212/268-4178. Internet: www.convertingloop.com .

Apr. 17, 2003. INDA Nonwovens Statistics Training Course. Cary, NC. For more information contact: INDA, P.O. Box 1288, Cary, NC; Tel.: 919/233-1210; Fax: 919/233-1282; Internet: www.inda.org .

Apr. 22-24, 2003. NCSU Melt Spinning Short Course - Fundamentals of Spunbond and Meltblowing. Raleigh, NC. For more information contact: Wade Carter, Office of Continuing & Professional Education, P.O. Box 7401, North Carolina State University, Raleigh, NC; Tel.: 919/515-2261; Fax: 919/515-7614. Internet: www.tx.ncsu.edu.

Apr. 28-29, 2003. IFAI Outlook 2003 Conference. DoubleTree Guest Suites, Charleston, SC. Focusing on the future of the specialty fabrics industry. For more information, contact: Karen Musech, IFAI, Roseville, MN. Tel.: 651/225-6948; Internet: www.ifai.com .

May 2003

May 1-3, 2003. INDA Annual Meeting. Baltimore Harbor Court Hotel, Baltimore, MD. For more information, contact: Misty Ayers, INDA, P.O. Box 1288, Cary; NC 27512; Tel.: 919/233-1210; Fax: 919/233-1282; Internet: www.inda.org .

May 12-13, 2003. 8th Annual conference on Recycling of Fibrous Textile and Carpet Waste, Dalton, GA. For more information, contact: Sean Travers, Georgia Institute of Technology; Tel.: 404/894-755.; Internet: www.tfe.gatech.edu/recycle_conf .

May 13-15, 2003. INDA Nonwovens Training Course. Cary, NC. For more information contact: INDA, P.O. Box 1288, Cary, NC; Tel.: 919/233-1210; Fax: 919/233-1282; Internet: www.inda.org .

May 14-15, 2003. Industrial Advisory Board Meeting - NCRC. Nonwovens Cooperative Research Center, Raleigh, NC. For more information contact: Rory Holmes, North Carolina State University, Raleigh, NC; Tel.: 919/515-4550; Fax: 919/515-7614. Internet: www.tx.ncsu.edu.

May 21-23 2003. Asian Nonwovens Exhibition and Conference (ANEX 2003). Intex, Shanghai, China. This is the major International Nonwovens Conference and Exhibition for 2003, sponsored by Asia Nonwovens Fabrics Association (ANFA) and China Technology Market Association (CTMA) and co-sponsored by INDA and EDANA. ANEX 2003 will incorporate the SINCE 2003exhibition. For more information, contact: Noemi Belamide, Paperloop Inc., 2018 Powers Ferry Road, Suite 600, Atlanta, GA

30339; Tel.: 678/589-8829; Fax: 678/589-8885. Internet: www.anex2003.com .

May 29, 2003. Nonwoven Statistics Seminar. INDA, Cary, NC. For more information contact: INDA, P.O. Box 1288, Cary, NC; Tel.: 919/233-1210; Fax: 919/233-1282; Internet: www.inda.org .

June 2003

Jun 2-5, 2003. Shanghaitex 2003 - 10th Annual International Exhibition of Textile Industry. Shanghai New International Expo Center, Pudong, Shanghai, China. For more information, contact: Monica Kan, Adsale Exhibition Services Ltd.; Tel.: 408/737-2820; Fax: 408/737-2369. Internet: www.adsale.com.hk .

Jun 2-6, 2003. Nonwovens Product Development Workshop. Cary, NC. Joint with INDA and North Carolina State University School of Textiles. For more information, contact: INDA, P.O. Box 1288, Cary, NC; Tel.: 919/233-1210; Fax: 919/233-1282; Internet: www.inda.org ; or Mr. Rory Holmes, North Carolina State University, Raleigh, NC; Tel.: 919/515-4550; Fax: 919/515-7614. Internet: www.tx.ncsu.edu.

Jun 17-19, 2003. Nonwovens Enhancements Conference. N. Raleigh Hilton Hotel, Raleigh, NC. Sponsored jointly by INDA and AATCC. For more information contact: INDA, P.O. Box 1288, Cary, NC; Tel.: 919/233-1210; Fax: 919/233-1282; Internet: www.inda.org .

Jun 18-19, 2003. ASTM Committee F23 on Protective Clothing. Adam=s Mark Hotel, Denver, CO. For more information, contact Steve Mawn, ASTM International, West Conshohocken, PA; Tel.: 610/8 32-9500; Fax: 610/832-9555. Internet: www.astm.org .

June 22-25, 2003. 12th Pan-American Conference on Soil Mechanics and Geotechnical Engineering. Massachusetts Institute of Technology, Cambridge, MA. For more information, contact: Professor Herbert Einstein, MIT; Tel.: 617/253-3598; Fax: 617/253-6044; einstein@mit.edu . Internet: http://soilrock.mit.edu/eng/welcome.html .

June 23-25, 2003. Characterization of Porous Materials: From Angstroms to Millimeters. Nassau Inn, Princeton, NJ. For more information, contact: Eleanor Lehman, TRI/Princeton, 601 Prospect Avenue, P.O. Box 625, Princeton, NJ 08542, USA; Tel.: 609/430-4820; Fax: 609/683-7149. Internet: www.triprinceton.org/workshop2003 .

June 30-July 2, 2003. Fiber Society Spring Technical Meeting - Advanced Flexible Materials and Structures. University of Loughborough, UK. For more information, contact: Dr. Memis Acar, Conference Chair; Wolfson School of Mechanical and Manufacturing Engineering, Loughborough University, Leics., LE11 3TU, UK; Tel.: 44+1509/227-533; Fax: 44+1509/227-648; Internet: www.fibersociety.org .

July 2003

July 15-17, 2003. NCSU Short Course - Fundamentals of Thermal Bonding. Raleigh, NC. For more information contact: Wade Carter, Office of Continuing & Professional Education, P.O. Box 7401, North Carolina State University, Raleigh, NC; Tel.: 919/515-2261; Fax: 919/515-7614. Internet: www.tx.ncsu.edu.

August 2003

August 12-13, 2003. INDA Nonwovens Training Course. Cary, NC. For more information contact: INDA, P.O. Box 1288, Cary, NC; Tel.: 919/233-1210; Fax: 919/233-1282; Internet: www.inda.org .

September 2003

Sep. 9-122, 2003. AATCC International Conference and Exhibition. Palmetto Exp Center, Greenville, SC. For more information, contact: AATCC, Research Triangle Park, NC; Tel.: 919/549-3531; Fax: 919/549-8933; Internet: www.aatcc.org .

Sep. 16-18, 2003. INTC 2003 International Nonwovens Technical Conference. Renaissance Harbor Place Hotel, Baltimore, MD. For more information, contact: INDA, P.O. Box 1288, Cary, NC 27512. Tel.: 919/233-1210; Fax: 919/233-1282. Internet: www.inda.org. Also, TAPPI, P.O. Box 105113, Atlanta, GA 30348. Tel.: 770/446-1400; Fax: 770/446-6947. Internet: www.tappi.org.

September 23-25, 2003. INDA Nonwovens Training Course. Cary, NC. For more information contact: INDA, P.O. Box 1288, Cary, NC; Tel.: 919/233-1210; Fax: 919/233-1282; Internet: www.inda.org .

October 2003

Oct. 1-3, 2003. IFAI Expo 2003. Las Vegas Convention Center, Las Vegas, NV. For more information, contact: IFAI, Roseville, MN; Tel.: 651/225-6942: Fax: 651/631-9334. E-mail: confmgmt@ifai.com. Internet: www.ifaiexpo.info .

Oct. 6-10, 2003. Nonwovens Product Development Workshop. Cary, NC. Joint with INDA and North Carolina State University, School of Textiles. For more information, contact: INDA, P.O. Box 1288, Cary, NC; Tel.: 919/233-1210; Fax: 919/233-1282; Internet: www.inda.org ; or Mr. Rory Holmes, North Carolina State University, Raleigh, NC; Tel.: 919/515-4550; Fax: 919/515-7614. Internet: www.tx.ncsu.edu.

Oct. 20-24, 2003. INSIGHT 2003. Nashville, Tennessee. For more information, contact: D. McCormick,

Marketing/Technology Service, 4100 South 7th Street, Kalamazoo, MI 49009; Tel.: 616/375-1237; Fax: 616/375-6710.

November 2003

Nov. 11-13, 2003. Techtextil South America. Sao Paulo, Brazil. For more information, contact: Messe Frankfurt GmbH, Frankfurt a. M. Germany; Tel.: 49+69/7575-0; Fax: 49+69/7575-6433; Internet: www.messefrankfurt.com .

Nov. 18-20, 2003. Filtration 2003. Navy Pier, Chicago, Illinois. Major conference and exposition covering all aspects of the filtration business. For more information contact: INDA, P.O. Box 1288, Cary, NC; Tel.: 919/233-1210; Fax: 919/233-1282. Internet: www.inda.org .

Nov. 18-20, 2003. Chem Show 2003. Jacob Javits Convention Center, New York City, NY. The major North American exhibition of chemical equipment and related items. Internet: www.chemshow.com .

Nov.18-20, 2003. 13th Annual TANDEC Nonwovens Conference. University of Tennessee Conference Center, Knoxville, TN. For more information, contact: Dr. Dong Fong, TANDEC, University of Tennessee-Knoxville; Tel.: 865/974-6298. Internet: www.tandec.com .

January 2004

Jan. 13-14, 2004. ASTM Eighth Symposium on Performance of Protective Clothing: Global Needs and Emerging Markets. Tampa, Florida, USA. Sponsored by ASTM Committee F23 on Protective Clothing. For more information, contact: Dorothy Fitzpatrick, Symposia Operations, ASTM International, W. Conshohocken, PA. Tel.: 610/832-9677; Web site: www.astm.org .

May 2004

May 23-27, 2004. 83rd World Conference - The Textile Institute. Donghua University, Shanghai, P. R. China. For further information, contact 83rd TIWC Secretariat at the College of Textiles, Donghua University, Shanghai 200051, P. R. China; Fax: 86-21/621-93061; Email: ti04shanghai@dhu.edu.cn . Internet: http://www.dhu.edu.cn/83tiwc.htm .

April 2004

April 27-29, 2004. IDEA 2004. Miami Beach Convention Center, Miami Beach, FL. For more information, contact: INDA, P.O. Box 1288, Cary, NC; Tel.: 919/233-1210; Fax: 919/233-1282;www.inda.org .

Press to return to the Table of Contents

WORLDWIDE ABSTRACTS AND REVIEWS

A sampling of Nonwovens Abstracts from Pira International — A unique intelligence service for the nonwovens industry

New rayon material from Daiwabo Rayon KK, the rayon that generates anion

Daiwabo Rayon KK, Japan, has successfully developed an anion generating rayon fibre, Iorina Rayon. Unlike conventional anion generating rayon fibres, Iorina fibres generate anions continuously without friction. The anion generating material is directly mixed in the Iorina fibres, thus the effects will be retained even after washing. Commercial applications has already been achieved: Shoji papers (Japanese room screens) with IKC KK (Kishiwada, Osaka, Japan); face masks with Ishihara Shoten KK (Tenno-ji-ku, Osaka, Japan). Market expansion will be achieved by collaborative projects with bedding and interior companies. The target production of Iorina Rayon is 10tpm.

Author: Anon

Source: Jpn Nonwovens Rep.

Issue: no. 9, Sept. 2002, p. 25 (In Japanese)

Industrial synthetic fibers: a new polymer era or evolutionary development?

It is possible to tailor the properties of industrial synthetic fibres to make them fit more closely the desired end use. Technical yarns made from polyamide (PA) or polyethylene terephthalate (PET) have higher tenacities and lower elongation which can lead to savings of material of up to 60%. The hot air shrinkage of the polymer can be varied. Low shrinkage is desirable for applications such as impregnated cotton fibres while high shrinkage enables production of dense fabrics such as those used in vehicle seat belts. The use of PA fibres is increasing as their high elongation is useful in vehicle airbags. In order to meet demands for alternatives to steelcord used in radial tyres and for asbestos substitutes, high modulus synthetic fibres such as aramid were developed and used in applications where heat resistance is required. The fibrillation properties of these fibres was useful in ballistic resistance. Carbon fibres were developed in the 1960s as a replacement for E-glass in reinforced plastics with higher tensile moduli. The development of polyacrylonitrile (PAN) fibres allowed considerable variation in tenacity and tensile modulus. New ultra high tenacity (UTS) materials are used in industrial safety components where high tensile strength is important. Carbon fibres have an advantages in that they do not pick up humidity and, unlike in ceramic fibres, problems of brittleness have been overcome. (4 fig, 4 tab, 15 ref)

Author: Blumberg H

Source: Tech. Text.

Issue: vol. 45, no. 4, Nov. 2002, pp E124-E127, 195-198

Medical staple fibers: manufacturing and application of nonwovens for tissue engineering

The range of nonwoven biomaterials for use as supports (scaffolds) for growing human tissue in organ transplantation and related medical procedures is limited because of the medical grade of purity required and the spinning performance. In the required quality and form of supply, neither nondegradable nor long-term degradable fibre material is commercially available, therefore spun materials based on polyvinylidene fluoride (PVDF) and poly(DL-lactide) (PDLLA) in the form of monofilaments have been developed. A typical laboratory scale fibre cutter/converter has been developed for converting these staple fibres into nonwovens. The yarn is guided by a powerful air stream through a tight bore. On leaving the bore it is cut using a fixed blade on the edge of the bore which is mounted on a rotor. In order to avoid contamination and polymer degradation, needling is used. The z direction perforation can improve tissue regeneration. Three dimensional structures can be designed by stacking layers of webs. At present scaffolds have been developed for the regeneration of periodontal defects and for tissue engineering of bladder walls. In the AIF-Project 39 ZN/1 a process is elaborated for bonding drug releasing microspheres. (4 fig, 2 ref)

Trends in agricultural nonwovens in Unitika KK

Unitika KK has started its agricultural nonwoven business in the 1970s by supplying spunbonded nonwoven sheets. The four popular applications are: inner curtains for greenhouses, field covers, rice field covers and field under layers. Reflecting the depressed agricultural industry in Japan, market expansion is unlikely without developments of new products and new applications. An environmentally friendly lactic acid polymer Latemac is dimensionally stable, washable and resistant against bad weather, and most importantly, it is not biodegradable under the normal conditions of use. Latemac nonwovens have already been applied as tree root protectors. The sheets will be biodegraded 3 years after planting to coincide with root developments of trees. It's also used as a field cover sheet, the disposal of which is easier than that of conventional nonwovens. Latemac is available in film, resin, fibre and nonwoven forms. (3 fig)

Author: Sawatari K

Source: Jpn Nonwovens Rep.

Issue: no. 9, Sept. 2002, pp 6-8 (In Japanese)

Kanaboard from Matsushita Denko KK, an environmentally friendly building material from plant fibre

Matsushita Denko KK, Japan, has developed an environmentally friendly building material Kanaboard from Kenaf bark fibre: Kenaf is a nonwood plant that requires only six months to reach its maturity. The Kenaboard development is a result of the collaborative work of Mitsubishi Denko KK and Universities in Japan and China, and its commercial production was started in Aug. 2002 in China. The density of this new building material is 600-1,000kg/cu m, and it exhibits superb mechanical strength and surface toughness. There are three types of products available made from Kenaf: Kenaboard from bark long fibres; Kenaf Fibre Sheet from bark long fibres (density 30-400gsm, excellent tensile strength); Kenaf Particle Sheet from core particles (density 100-500kg/cu m). Expansion of the commercial plantation for Kenaf is expected in China and Malaysia. The sales of Kenaboard and related products is expected to be JPY10,000m in 2005. (3 fig)

Author: Anon

Source: Jpn Nonwovens Rep.

Issue: no. 9, Sept. 2002, pp 18-19 (In Japanese)

Ozone, sunlight, nitrogen oxide: a fair weather component in environmental simulation technology of technical textiles

Guarantees of functional usage times are increasingly being demanded by customers from the manufacturers of high quality technical textiles and this has led to pressure to develop suitable accelerated aging tests. While investigations into real ageing behaviour are too difficult, take too long and are too expensive, a new system for determining the effect of ozone, sunlight and nitrogen oxide was developed to determine the influences on the ageing behaviour of technical textiles. The plant comprises a standard climate test cabinet equipped with apparatus for the discharge and metering of corrosive gas, an ozone generator, sunlight simulation equipment and filters. It was shown that the individual components and their combinations have a considerable influence on ageing behaviour and a well-adapted "fair weather component" within an experimental environmental simulation programme can make a valuable contribution to a quite realistic, but accelerated ageing test for the behaviour of textile products. Some typical results for tests on samples of textile fabrics are reported with particular reference to the use of such fibres in the form of membranes, sewing yarns, awnings, and ropes. (5 fig, 5 tab)

Author: Ernst M

Source: Tech. Text.

Issue: vol. 45, no. 4, Nov. 2002, pp E132-E134, 203-206d

Modern hotmelt applications for the growing market for laminates

The use of hot melt adhesives for the manufacture of laminates is expected to increase with respect to wet lamination processes, particularly as ways are found to increase the speed of the process. Increasingly the technique is being used in the automotive industry, for interlinings, medical textiles and other clothing applications. In hotmelt coating systems, the coating head should be positioned near to the substrate to avoid temperature changes resulting from cold air flow. A typical hot applicator uses a three roller screen applicator as used in deep valley printing. Coat weight is determined by the gap between the dipping and applicator rollers and between the applicator and counter roller and the substrate. In the slot die system, the polymer is heated and pumped to the coating head. This protects the hot melt against oxygen and air humidity. Coating weight is determined by the pump and by web speed. Thermoplastic material can also be applied as a powder to the web and subsequently melted, cooled and smoothed. It is possible to laminate any type of textile material and/or foil with one side adhesive for bilaminate or both side adhesive for trilaminate in order to give a textile material special properties such as stability, tear strength as well as good processing handle quality. (4 fig, 2 tab)

Author: Reuscher R; Glawe A; Giessmann A

Source: Tech. Text.

Issue: vol. 45, no. 4, Nov. 2002, pp E148-E149, 220, 222d

Biodegradable nonwoven technology, the key for an environmentally friendly society

Biotechnology is generally regarded as an environmentally friendly technology. Biopolyesters, produced by several types of bacteria, are biodegradable and its characteristics can be improved by optimising the feeding and culturing conditions in the bioreactor. They are thermoplastic, and also generate electric charges under pressure, leading to applications in medical, electronic and optical fields. Synthetic biodegradable plastics include: Cell Green P-H from Daicell Kagaku Kogyo KK, Bionore from Showa Kobunshi KK, Lacty from Shimazu Seisakusho KK, Ecoloju from Mitsubishi Jyushi KK and Boval fromKuraray KK. Those are already commercialised for the agricultural, garden, construction, food packaging and domestic products. Photolysis and photosynthesis of plastics, by utilising solar power, is an another environmentally friendly technology, of which developments are expected. (5 fig, 3 tab, 4 ref)

Author: Takaoka Y

Source: Jpn Nonwovens Rep.

Issue: no. 10, Oct. 2002, pp 17-22 (In Japanese)

Trends, developments and new ways

Global nonwovens output reached 3.9mt in 2001, equivalent to approximately 93bn sq m, according to INDA estimates. Nonwoven rollstock production rose by an average 7.5%/y from 1991-2001 and is expected to maintain this growth rate, with joint US,

European and Japanese turnover exceeding USD20bn in 2006. Output by area is forecast to grow more rapidly than by tonnage reflecting the trend to lower grammage materials. EDANA figures show that West European nonwovens production rose 4.3% to a record 1,070,300t in 2001, due to the development of disposable products based on airlaid, spunlaid and water jet technology. West European output rose 12.0% to 29,060m sq m in 2001, with a total turnover of approximately Euro4,450m. Production by some 50 German nonwovens producers rose 6.3% to 312,000t in 2001, with exports accounting for 54% of the Euro1.14bn turnover. According to industry spokesmen, future growth will be focussed on research into added value products based on the use of new laminating and coating technology and intelligent fibres. West European demand is expected to be increasingly met by East European suppliers. EDANA expects to see further growth in incontinence, geotextile and automotive products, and new developments in the filtration, carpet and agricultural sectors.

Author: Anon

Source: Allg. Vliesstoff-Rep.

Issue: no. 6, 2002, pp 32-36 (In German)

Ultrafine filter technology: new micronAir plant

Freudenberg Vliesstoffe KG has expanded its Kaiserlautern, Rhineland-Palatinate, Germany, plant to produce micronAir filters for car interiors. The plant was established in 1970 to produce nonwovens for baby diapers and spunbonded polyester carpet tufting for cars. The Euro2.7m investment enables the company to produce particle filters that contain electrically charged microfibres to protect car interiors from dust and dirt. A Kombifilter variant also includes an activated charcoal layer to adsorb ozone, benzene and odours. Its pore structure can be varied to provide 400-1,800sq m active surface area per g of charcoal. The combination of particle filters and adsorbers offers high functionality and long service life.

Author: Anon

Source: Allg. Vliesstoff-Rep.

Issue: no. 6, 2002, pp 50-51 (In German)

Nippon Koudoshi KK, unique business developments with highly value added product, the leader of the world condenser separator market

Nippon Koudoshi KK, Haruno-cho, Kochi, Japan was established in 1941 as a speciality paper company. Since its first production of condenser separators in 1943, it has been leading the world market and holds 70% of the global market share. The company capital and annual revenue is JPY2,242m and JPY13,222m, respectively. In addition to the condenser separators, it produces battery separators, circuit board bases, home care products, spun-bonded nonwovens and melt-blown nonwovens. Nippon Koudoshi avoids markets that requiring mass production, such as sanitary products, and focuses on the developments and manufacture of highly value added unique products. (1 fig)

Author: Anon

Source: Nonwovens Rev.

Issue: vol. 13, no. 3, 2002, p. 13 (In Japanese)

Shinwa KK, functional products based on the various types of nonwovens, accelerating biodegradable nonwoven product commercialisation

Shinwa KK, Kawanoe-City, Ehime, Japan, is equipped with 4 types of nonwoven making systems resin bonded, thermal bonded, spunlace and spunbonded), and a wide range of nonwoven products includes: sanitary products, (disposable nappies and sanitary pads), domestic products (tablecloths and clothing covers), industrial materials (air filters and wipers), medical products (sheets and surgical masks); agricultural and garden materials (mulching sheets and field covers); construction and building materials (roofing and wall materials). Hybon is a biodegradable spun-bonded nonwoven, and its production is increasing with limited applications in the agricultural and construction. To expand its market further, new application developments, especially combining with other natural materials, is necessary. Improvement of the cost performance should be evaluated for the successful commercialisation. Shinwa KK gained ISO9001 in October 2002 and is aiming to have ISO14001 in the near future. (1 fig)

Author: Ishikawa H

Source: Nonwovens Rev.

Issue: vol. 13, no. 3, 2002, pp 18-19 (In Japanese)

Nonwovens as construction, agricultural and garden materials, Toyobo's case

Nonwoven production for agricultural, garden and construction applications was 40,318tpy in Japan in 2001, which was 14% of the total nonwoven production and decreased by 4% from 2000. Expansion of the existing market is unlikely in the near future, and customised, of which specifications are determined by each client's requirements, will be the key for the survival in the tough market. Toyobo KK supplies a variety of geotextile nonwovens. In addition to the widely used Bonrus, e-Bonrus from long fibre polyethylene terephthalate (PET) from recycled PET bottles has been developed. EcoEkure is an eco-friendly version of Ekure, and both can be used as agricultural mulching sheets. In the Kyushu and Shikoku area, birds can cause serious problems by picking fibres from geotextiles and agricultural nonwovens. To prevent those fibre losses, K-series (surface toughened by burning) and CRE-series (multi-layerd multi material sheets) have been developed. (4 fig, 1 tab)

Author: Matsushita M

Source: Jpn Nonwovens Rep.

Issue: no. 9, Sept. 2002, pp 2-5 (In Japanese)

Eco-friendly green business developments, advanced geotextile from Rontai KK

Rontai KK is a pioneer in the green enhancement business. Rontai, Roncket Wara and Roncket Net are enhanced turf materials, and are widely used for the reinforcement of canals, river banks and highways. Greenbag and Greenbag Eccel are applied as fillers for highway concrete fences. Shinkuromat is a unique three layer product: the bottom layer containing seeds of supportive plants; the middle nonwoven bag containing seeds of target plants, soil and fertiliser; the top layer of palm net. This flexible geotextile can be placed on hard and rocky soils, or on the uneven slopes. Ronket Deargreen and Ronket Orga are two eco-friendly lines made from biodegradable materials, and the sales of the latter is particularly good. Ronket Orga has insulation effects and protects seeds from extremes of temperature and dryness. The high density of its top layer (350gsm) prevents contents loss. All components will be biodegraded by the time plants have settled. Roof gardens are becoming popular in big cities in Japan, and Rontai is confident for its contribution to this high potential market. (4 fig)

Author: Anon

Source: Jpn Nonwovens Rep.

Issue: no. 9, Sept. 2002, pp 9-12 (In Japanese)

Wet type nonwovens for functional products, and airlaid nonwovens for sanitary products

Shikoku has been one of the principal paper producing districts in Japan since ancient time. The method of manufacture of traditional Japanese paper (Washi) is similar to that of wet laid nonwovens and the traditional papermaking knowledge helped the developments of the paper and nonwoven industries in Shikoku. Compared to the Shizuoka district, Shikoku is remotely located from the biggest paper consuming city Tokyo. To overcome this problem, Shikoku focuses on wet laid nonwovens with highly value added functions and airlaid nonwovens for sanitary products. There are many companies leading the Japanese and global markets. For example, Nippon Kodshi Kogyo KK (Kochi Prefecture) is the top in the world condenser separator market, and Daio Seishi Kogyo KK (Ehime Prefecture) is the leading manufacture in the tissue and toilet paper industry in Japan. Two paper testing centres, Paper Industrial Research Institute of Ehime and Kochi Prefectural Paper Technology Centre, play important roles in technical developments of the functional paper and nonwoven industry in Shikoku.

Author: Anon

Source: Nonwovens Rev.

Issue: vol. 13, no. 3, 2002, p. 1 (In Japanese)

Paper Industrial Research Institute of Ehime, a non-profitable organisation supporting the paper and nonwoven industries

The Paper Industrial Research Institute of Ehime is a non-profit institute that supports the paper and nonwoven industries in Shikoku, in particular, 10 companies in the Kawanoe Area in Ehime, Japan. In addition to its own research projects, it carries out contract testing and evaluation, technical consultant, education, conference organisation and information supply. The new testing laboratory is due for completion in March 2003 and is being built with financial support from the government. This new building will serve as a focal point of the collaboration project and of information exchange among universities, national institutes and industries. (2 fig)

Author: Fujiwara K

Source: Nonwovens Rev.

Issue: vol. 13, no. 3, 2002, pp 2-5 (In Japanese)

Kochi Prefectural Paper Technology Center, for a new business based on the collaboration between industries and academia

The Kochi Prefectural Paper Technology Centre consists of a exhibition room, a library, a conference room, a basic laboratory, a nonwood research laboratory, a physics laboratory, a analytical laboratory, an information centre, a modification/converting evaluation laboratory, a bio research laboratory and an atmosphere (temperature and humidity) controlled room. In addition to its own research projects on the topics in the industry, it performs contract works (testing, evaluation and report preparation), education and information supply. It also promotes collaborative projects between industries and academia, and provides technical support to those joint research projects. The centre is equipped with water jet, thermal bond and spunlace nonwoven machinery, 23 types of converting machines and 38 papermaking and material treatment facilities. The centre carried out 2,988 contract works in 2001, an increase of 31% from 2000. (3 fig)

Author: Anon

Source: Nonwovens Rev.

Issue: vol. 13, no. 3, 2002, pp 6-9 (In Japanese)

Miki Tokushu Seishi KK, accelerated new technology and product developments by business alliances

Miki Tokushu Seishi KK, Kawanoe-City, Ehime, Japan, supplies a wide range of functional paper and nonwoven products. These include electronics related products such as battery separators and insulation paper, filters such as coffee filters and tea bags, interior products such as the rayon screen Mikiron, medical products including surgical masks and coats and tapes including masking tapes). A JPY1,500m investment was made for the installation of two advanced machines, a wet laid nonwoven machine and a spunlace nonwoven machine. Author: Miki M

Source: Nonwovens Rev.

Issue: vol. 13, no. 3, 2002, pp 10-12 (In Japanese) ***— INJ***

Press to return to the Table of Contents