

WORLDWIDE ABSTRACTS AND REVIEWS

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

Asahi Kasei Seni KK: recent trends and prospects of spunbond nonwovens

Asahi Kasei Seni KK, Japan, is launching new functional spunbond nonwovens. Elutas Flex is made from nylon and has soft texture and elasticity. It is used for automotive components, shoes and packaging materials. Elutas Flat, made from flat polyester fibres, shows excellent mechanical strength and surface smoothness. It is particularly useful for applications requiring high quality printing. Elutas Smash is also made of polyester and can be formed by heat pressing. It is mechanically strong and air permeable and is often used for medical and food containers and agricultural materials. Elutas FR is made from flame retardant polyester, and is ideal for car, building, interior and soft furnishing applications. Semia and Semia V are air permeable functional spunbonded nonwovens, containing active carbon or volatile organic compound (VOC) absorbing components. Elutas Fine is strong and waterproof. Elutas Aqua and Elutas Climp are a water permeable and bulky polypropylene spunbond nonwovens, respectively. The former is used for sanitary, interior and bedding; the latter is for wipes, filters and car materials. (2 fig)

Author: Ueno I

Source: Jpn Nonwovens Rep.

Issue: no. 3, Mar. 2004, pp 16-18 (In Japanese)

Unitika KK: prospects of spunbond nonwovens in the future

Spunbonded nonwovens production in 2003 in Japan was approximately 100,000tpy, and has doubled in 5y. Unitika KK, Japan, provides composite spunbond nonwoven based on its advanced polyethylene (PE) and polyethylene terephthalate (PET) technology. Elbesu is a well known spunbonded nonwoven made from bicomponent fibre comprising a PET core, with a melting point of 260 deg C and a PE outer layer. The outer PE was further modified to lower its melting temperature by 20-30 deg C. The resulting Elbes II is ideal for applications requiring low temperature heat lamination. Alcima is made from a special star shaped fibre, a polyethylene core fibre surrounded by six ultrafine PE fibres. Alcima is mechanically strong and soft, and is easy to convert because of its excellent heat adhesion performance. Its applications include computer wipes, general wipes, medical and sanitary materials, packaging materials and filters. Unitika KK also supplies an environmentally friendly spunbonded nonwoven Terramac, made from biodegradable polylactic acid (PLA). Reduced costs of PLA manufacture will enable wider applications of Terramac. (2 fig, 1 tab)

Author: Tsugawa Y

Source: Jpn Nonwovens Rep.

Issue: no. 3, Mar. 2004, pp 19-21 (In Japanese)

Futamura Kagaku KK: Taiko TCF, a wet type short fibre spunbond nonwoven

Taiko Textile Continuously Formed (TCF) is a wet type short fibre rayon

spunbonded nonwoven developed by Futamura Kagaku KK, Japan. It is made from cellulose from pulp. Treatment of cellulose by processes such as extrusion under special conditions results in an active fibre composed of an outer layer of cellulose, an intermediate heat adhesive component and a highly hydrophilic inner component. Taiko TCF active fibre is thermoplastic when wet and binders are not required. The product is made by a totally inline system, from raw material to finishing. It is soft and mechanically strong, and has a cushion like bulkiness, high water absorption and retention. Taiko TCF is biodegraded by 12mon in the soil, and by 4wk by composting. Applications of Taiko TCF are for medical, sanitary, wet tissues and cosmetic products. (4 fig, 1 tab)

Author: Anon

Source: Jpn Nonwovens Rep.

Issue: no. 3, Mar. 2004, pp 22-24 (In Japanese)

Sound Block from Toyobo KK, a light weight and high performance noise controlling material for car interior

Toyobo KK has developed Sound Block, a material for automotive interiors made from ultra microfibres of diameter 0.7 micron, at thicknesses of 0.3-3.0cm, Sound Block shows superior noise control performance to conventional polyester nonwovens, microfibre nonwovens and wool materials in the high frequency range of 1,000-5,000Hz. It also has an insulation effect resulting in improvement to the air conditioning efficiency of the car. It is of low weight, compact and easy to convert. It can be used applications such as engine cover, instrument panel, floor, head cover and boot carpet. Sound Block meets the flame retardant standard by of the Federal Motor Vehicle Safety Standard (FMVSS), and is also recyclable since it is made from a single material. (3 fig)

Author: Anon

Source: Jpn Nonwovens Rep.

Issue: no. 3, Mar. 2004, p. 46 (In Japanese)

Beaver Mask from Mitsubishi Juko KK, a anti-bacterial and anti-virus mask utilising the air conditioning system technology

Mitsubishi Juko KK, Japan, launched Beaver Mask in the middle of February 2004. Mitsubishi Juko Reinetsu Kikai KK, a 100% daughter company of Mitsubishi Juko KK, will supply the product, at a price of JPY500, nationwide. As the name suggests, the origin of the Beaver mask technology is in Beaver Aircon, a well known air purifying and conditioning system of Mitsubishi Juko KK. The mask comprises of a waterproof polypropylene (PP) nonwoven outer layer, a moisture absorbing PP nonwoven inner layer and an enzyme immobilised rayon nonwoven middle layer. The enzyme inactivates viruses by dissolving the envelope proteins, which are necessary for survival in 80% of known viruses. Thus, the Beaver mask is effective in the prevention of most viral infection, such as influenza, severe acute respiratory syndrome (SARS) and avian flu virus. More importantly, this mask eliminates the risk of incubation and secondary spread of captured viruses. (3 fig)

Author: Anon

Source: Jpn Nonwovens Rep.

Issue: no. 3, Mar. 2004, p. 49 (In Japanese)

Development of a high performance active carbon filter from fibre rejects (fibre waste)

The Japan Society of Technology (JST) provided a grant to fund a project to develop a high performance active carbon filter from fibre waste, applied by Mikawa Seni Gijutsu Centre, Toyohashi Gijutsu Kagaku University, and three local companies, including Toyo Service KK. The project will be carried out in Kenkyu Seika Katsuyo Plaza Tokai with a JPY40m/y budget for three years. The project is based on active carbon nonwovens and carbon fibre conversion technology for highly functional applications. The former will be developed and patented by Mikawa Seni Gijutsu Centre and Toyo Service KK, and the

latter has already developed by Toyohashi Gijutsu Kagaku University. The fibre wastes used will be a mixture of various types and shapes of fibre.

Author: Anon

Source: Jpn Nonwovens Rep.

Issue: no. 3, Mar. 2004, p. 53 (In Japanese)

Gunma University developed carbon nanofibre using the new system developed by Nippon Nozzle KK

Professor Ohtani, Gunma University, Japan, has developed a new method for the manufacture of carbon nanofibres, which does not require a metal catalyst. A new system, developed by Nippon Nozzle KK is used. Using a highly orientated polymer, the crystallisation of nanofibres of diameter 100-200nm, with a layered depth of 57nm could be achieved. The resulting material shows excellent mechanical strength and conductivity and has potential for use in nanocomposites and additives for lithium ion batteries. (Short article) (1 ref)

Author: Anon

Source: Jpn Nonwovens Rep.

Issue: no. 3, Mar. 2004, p. 62 (In Japanese)

Toray develops paper that absorbs electric waves

Joint working by Toray Industries Inc and Kenichi Hatakeyama, an assistant professor at Himeji Institute of Technology, Japan, has produced a new paper which can absorb electric waves at frequency bands used for cellular phones, televisions and wireless local area networks. A new, conductive fibre enables the paper to absorb up to 99% of electric waves to a 100GHz frequency. The paper will be used in laboratory experiments with wireless communications technologies to promote the "ubiquitous society", accessing data online at all times in any location. Sales will be through Tohoku Chemical Industries Ltd from April 2004. The sales target is JPY100m. (Short article)

Author: Anon

Source: New Mater. Jpn

Issue: May 2004, p. 8

EDANA: quo vadis? The European nonwovens industry and its association at a crossroads

European nonwovens production and sales volumes rose by more than 6% in 2003, according to preliminary estimates by the EDANA trade association. The industry is faced with the problem of maintaining or enlarging its market position, as well as developing innovative new products and using its resources more efficiently. EDANA, formed to promote nonwoven and absorbent hygiene products and their suppliers, faces a similar challenge. In 2004 EDANA will stage more promotional and networking events than ever before, with improved training facilities for its members, and representing members' interests in regulatory, marketing and technical matters. EDANA has created a website to allow both authorities such as the European Union and the World Trade Organization, and end users to become more familiar with nonwoven products to provide fair access to raw materials and export markets. Forthcoming events include the Outlook 04 meeting of the bodycare product supply chain, the Filtrex filtration conference, and the Index 05 nonwovens exhibition.

Author: Wiertz P

Source: Allg. Vliesstoff-Rep.

Issue: no. 3, 2004, pp 2, 4

Rise in world fibre production

The Lenzing Group's earnings before interest and taxes (EBIT) declined from Euro78.4m in 2002 to Euro74.0m in 2003, with turnover 0.6% lower at Euro621.9m. The Group's surplus rose from Euro49.2m in 2002 to Euro60.5m in 2003. The European textile and nonwovens industry was adversely affected by the continuing economic downturn and the weak dollar in 2003. While Lenzing increased its output of viscose fibre, overall European production fell by approximately 0.2%. In contrast, Asian demand was significantly higher, particularly in China, helped by a steep rise in cotton and polyester fibre prices in the second half of 2003. Chinese viscose

fibre production rose by approximately 20%. Global fibre production is estimated to have increased by 4.2% to 56.5mt, with viscose staple fibre 7.8% higher at about 1.8mt. Growth is expected to continue, driven by rising affluence in developing countries and new applications for nonwovens. Lenzing is increasing its Lenzing plant's fibre and pulp production capacity to 200,000tpy and 210,000tpy respectively. A second Lyocell line at its Heiligenkreuz plant will raise its production capacity to approximately 40,000tpy. The Indonesian South Pacific Viscose joint venture's output reached around 135,000t in 2003.

Author: Anon

Source: Allg. Vliesstoff-Rep.

Issue: no. 3, 2004, p. 7 (In German)

Filter materials for regeneratable pocket air filters

A research project by the Institute for Air and Cooling Technology in Dresden, Germany, studied the cleaning of commercial pocket air filters used to remove dust particles. The filters were cleaned online and offline by intermittent blasts of compressed air. Many of the filter materials examined were found to have low bond strengths so that they were partially destroyed by compressed air treatment. Particle filters capable of regeneration can be made by combining sewn and waterjet bonds. Such structures have not so far been used for air filters to any extent. A combination of high bulk Kunit and fine pore size airlaid nonwovens, using fibre mixes containing split fibres, were found to have both the high dust collection capacity required and the bond strength necessary to withstand cleaning. Experimental air pocket filters made from nonwoven Hyconit fabric provided good filtration performance and were not damaged by the compressed air used to clean the filters.

Author: Schmalz E; Frenzel W P

Source: Allg. Vliesstoff-Rep.

Issue: no. 3, 2004, pp 29-30 (In German)

New recycling process for p-aramid fibers from fabric wastes

The Thurlingisches Institut für Textil, Rudolstadt, Germany has developed a new approach to the recycling of p-aramid fibres. P-aramid fibres were launched in the 1970s as a light but strong fabric reinforcement material for protective and ballistic clothing. However, the reclamation of these fibres has always produced a relatively low quality result with short filament lengths and considerable damage. This new technique uses a refinement of existing processes to produce a longer filament product with less fibrillation. The number of neps is substantially reduced while retained strength is improved and losses in modulation are lowered. The technique for filament yarns involves using two L shaped cutters to give 70mm x 70mm pieces which are then disaggregated using a wet crushing mill. For staple fibres, the raw material is cut to 50mm x 50mm and disintegration is carried out in a one drum or two drum tearer with the pin density and periphery speed carefully set. It is desirable that the material is wet to a moisture content of 10-15%. The output can then be passed directly to a conventional processing line or baled for later use and the entire process can be semi continuous. In principle this technique could be adapted for use with many other types of fabric. (6 fig, 1 tab, 2 ref)

Author: Ortlepp M; Weiss-Quasdorf M; Gulich B

Source: Tech. Text.

Issue: vol. 47, no. 2, May 2004, pp E63-E64, 76, 78

Nonwoven manufacture, ITMA 2003: state-of-the art and developments coming up

ITMA 2003 was held in Birmingham, UK, where 77 manufacturers from Europe, Asia and USA exhibited machinery for producing nonwovens. Trutzschler GmbH and Co KG, Monchengladbach, Germany exhibited its Tufffeeder, formerly the Scanfeeder FBK, which has a capacity of 500kg/m

of working width at widths of up to 500cm. Spinnbau Bremen GmbH, Bremen, Germany, has launched a modified Delta Card with a new transfer system between the pre-drum and the main drum. The CV1 system of Dilo allows lay-down speed to be increased and evens out laying across the width of the web, avoiding heavy edges. Autefa Automation GmbH, Friedberg, Germany, showed laying units in its CL4000 range which are compatible with the Webmax even-out system. This allows the web delivered to the carding machine to be stretched in order to achieve a variety of weight profiles. Turbo Card of Spinnbau Bremen has a drum with a high rotational speed made of carbon fibre reinforced plastic. Laying units already in use can be upgraded with the CL4000. Shoon Shyng Machinery Co Ltd, Taipei Hsien, has developed a high quality, double finish-needling machine with a lift frequency of 1,200rpm at a working width of up to 620cm. The productivity of this unit has been improved by changes to the needle profile. Eduard Kusters GmbH, Krefeld, Germany, and BM Bombi Macanica, Italy, have launched high speed calenders. Fleissner GmbH, Egelsbach, Germany exhibited its AquaJet Spunlace System, which is integrated to a crosswise stretching unit. New thermofusion furnaces have been developed by Schott und Meissner, BM Bombi and Sicam. The RS3 MSUS-V from Karl Mayer Malimo GmbH of Chemnitz, Germany has robust knitting elements and reinforced hooks which will process high grade weft and nonwovens of up to 350gsm which can be used in filters, drain pipes and geotextiles. (3 fig)

Author: Fuchs H; Schilde W; Gulich B

Source: Tech. Text.

Issue: vol. 47, no. 2, May 2004, pp E66-E68, 79-81

Inorganic-organic hybrid polymers improve the stab resistance of ballistic fabrics

P-aramid fibres were launched in the 1970s as a light but strong fabric rein-

forcement material for protective and ballistic clothing and although they perform well in ballistic tests, stopping projectiles within a few layers of fabric, their resistance to stabbing is poor due to the low stability of the fibres perpendicular to the fibre axis. Inorganic-organic hybrid polymers based on sols of 3-glycidyloxypropyltrimethoxysilane (GPTMS) were used which were modified with alumina nanoparticles which were either dispersed into the sols by ultrasonic treatment or by reflux heating, or added from freshly prepared metal oxide sols. The coated fabrics were tested for stab resistance using a falling knife missile using 20 layers of fabric at a weight of 4,400gsm. The use of a GPTMS based sol modified with a freshly prepared alumina nanosol can greatly improve the stab resistance, showing that the cutting depth of standard tests can be reduced to less than 10mm, while acceptable limits are usually considered to be 20mm, without the excessive weight increase found using ceramic plates. Most of the GPTMS modified materials passed ballistics tests, but some gave inferior results compared to unmodified material. Long term exposure of p-aramid material to ultraviolet (UV) radiation leads to a loss of ballistic protection properties. Modification of the GPTMS based sols with zinc oxide or titanium dioxide can reduce UV degradation of the P-aramid fibres which can cause a loss of tensile strength of up to 80%. After treatment, losses were found to be negligible. (6 fig, 1 tab, 6 ref)

Author: Textor T; Bahnners T; Schollmeyer E

Source: Tech. Text.

Issue: vol. 47, no. 2, May 2004, pp E72-E74, 85-87

Special application needles for processing technical textiles

Technical textiles, as opposed to apparel or domestic textiles, are often produced from a combination of different materials which may be coated or bonded, woven, knitted or nonwoven. The use of extremely hard materials,

foams, adhesive foils or flame retardant finishes is common. Although the sewing process is largely the same, this places special demands on the needles used. Special Application Needles (SAN) 5 Gebedur are specially developed for the sewing of technical textiles and incorporate numerous special features. In order to prevent needle deflection due to the sewing of hard materials, the SAN 5 Gebedur is produced from titanium nitride, reducing wear, and the needle geometry is designed to reduce deflection by 25%. This, together with the design of the needle scarf, improves loop pickup by 25% across needle sizes 120-140Nm. Friction is reduced allowing better thread gliding and the likelihood of synthetics melting and sticking to the needle and the design of the inner edges of the eye reduces the twist shifting of the thread when sewing backwards, particularly with Z-twisted threads, giving a more regular appearance in all sewing directions. (7 fig)

Author: Schneider F

Source: Tech. Text.

Issue: vol. 47, no. 2, May 2004, pp E81-E82, 104-105

Cellulosic fibers for spunlace nonwovens

Figures for 2000 showed that almost 70% of all nonwovens fibres and polymers, including spunbonds, were produced from polyester or polypropylene. It is predicted, however, that while these fibres will continue to dominate the markets, a decline will be noted in their combined overall market share. This results from the rapid rise of viscose and lyocell staple fibres. With an average growth rate of 8%/y forecast to 2010, these fibres represent the largest growth rates of all the polymers and fibres employed in nonwovens manufacture. (Short article)

Author: Anon

Source: Tech. Text.

Issue: vol. 47, no. 2, May 2004, p. E52

ExxonMobil: new mPP polymer

Achieve metallocene polypropylene (mPP) is to be introduced to the markets

by ExxonMobil Chemical, USA, for non-wovens and other markets. The new products have been developed through the broadening of the Exxpol technology, which manufactured the first metallocene-catalysed polypropylene in 1995. Achieve 6936G1 features a high melt flow rate and also narrow molecular weight distribution, and is the first metallocene polypropylene which is specifically designed for meltblown process applications. (Short article)

Author: Anon

Source: Tech. Text.

Issue: vol. 47, no. 2, May 2004, p. E52

Drake Extrusion: new PP fiber specialties

Drake Extrusion Ltd, Drighlington, West Yorkshire, UK, is one of the major polypropylene (PP) fibre manufacturers in Europe with a capacity of 35,000tpy at two UK sites. The company has achieved strong positions in certain niche markets over three years, by investing in equipment, product development and marketing. It manufactures products for the automotive sector, including products with high levels of ultraviolet (UV) protection. It has also expanded business in "hidden" automotive applications using natural fibres, such as jute or flax, blended with PP fibres in needlepunched fabrics to be shaped for wheel arches and floor pans for insulation. Investment has been made to develop finer denier and short cut fibres down to 2.2dtex and 5mm staple lengths, and production of these is being expanded. Products incorporating additives to improve flame retardant properties and outdoor applications requiring high levels of UV stabilisation are also produced. A new highly absorbent PP fibre, used in the manufacture of fabrics holding up to 500% of their own weight in liquid is aimed at the wipes market, the incontinence sector and other end uses. Permafresh fibres provide control of bacteria, mould, mildew and fungi. The antimicrobial properties migrate to adjacent fibres. Textil PP filament yarns are also produced for woven mattress tickings,

knitted fabrics, upholstery and for the cement and building materials industries. (Short article)

Author: Anon

Source: Tech. Text.

Issue: vol. 47, no. 2, May 2004, p. E52

Toppan Printing develops electronic paper with high resolution

The electronic paper recently developed by Toppan Printing Co Ltd, Tokyo, Japan, has a resolution of 400ppi, the highest resolution now available in the industry. The electronic paper uses an electrophoresis microcapsule process which Toppan Printing has jointly developed with E Ink Corp, USA. The two companies have already launched electronic paper for mass production for the Sony Corp's LIBRIe electronic-book terminal. The back board utilises amorphous silicon thin film transistor (TFT). The resolution for the new prototype has been improved by employing silicon substrates for the back board. The same front board is used as in the mass-produced E-papers. The structure of the prototype has a similar appearance to a liquid-crystal-on-silicon (LCOS). The electronic paper could be employed in wearable devices and information cards, and Toppan Printing will consider commercialisation if there is sufficient demand. (Short article)

Author: Anon

Source: New Mater. Jpn

Issue: July 2004, p. 4

Stronger nanometer-level polyester fibre developed

Teijin Fibers Ltd, Japan, and Yutaka Ohkoshi, Professor of Textile System Engineering at Shinshu University, Japan, have developed a nanometer level polyester fibre with sufficient strength for use in clothes as it is twice as durable as others produced so far. The clothes would be lighter and absorb twice the amount of water of those made from conventional polyester fibres. This is because the surface area of the nanofibres is 300-1000 times larger. Teijin Fibers Ltd, which is a subsidiary of Teijin Ltd, hopes to commercialise the

product within two years when mass production technology has been developed. Many other applications are possible for the new fibre as diameter is adjustable from 100-1,000nm and has a fluctuation range of 5% or below. One such application could be in high-performance filters sifting cigarette smoke particles of diameter 100-500nm and influenza viruses of diameter 20-300nm. (Short article)

Author: Anon

Source: New Mater. Jpn

Issue: July 2004, pp 11-12

Sony develops 25GB paper disk

A paper Blu-ray disk capable of holding 25GB of data is being developed by Sony Corp. Joint work with Toppan Printing Co Ltd has been under way over the past year to print data on to Blu-ray disks principally made of paper in order to expand the use of the technology and manufacture cheaper disks. The disks will be able to carry over 2hr of high definition video will be possible. The Blu-ray format uses blue laser light and have five times the capacity of conventional DVDs. With paper disks easily cut by scissors, data security is easy to preserve when disks are no longer needed. The Blu-ray Disk Founders has been formed to promote this format, comprising: Sony, Dell, Hewlett-Packard, Hitachi, LG Electronics, Matsushita Electric Industrial, Pioneer, Royal Philips Electronics, Samsung Electronics, Sharp, Sony, Thomson and other companies. A group, including NEC and Toshiba, is working on competing blue laser disk technology, compatible with existing DVD standards. Progress is being made using organic materials such as Sanyo's MildDisk, launched in April 2004, and made from polylactic acid in corn kernels. This will replace the present polycarbonate used in disks which are not biodegradable. A recordable version of MildDisk is being developed. (Short article)

Author: Anon

Source: New Mater. Jpn

Issue: June 2004, pp 8-9

New material developments lead to the creation of new products

Recent new products in the sanitary market are based on new concepts, such as advanced material technologies. Daio Seishi KK and Uni Charm KK have launched disposable nappies designed for swimming and paddling. Daio Seishi KK and Oji Nepia KK have introduced fashionable thin nappies with distinguished print patterns. Improvements on superabsorbent materials, nonwovens and printing technologies were used in these products. No Line Slim by Daio Seishi KK is an example of novel products in the feminine hygiene market, reflecting the recent fashion trends among working women towards trousers. The use of a combination of superabsorbent polymer and flexible materials were used in the development of this new product that shows no line on the trousers. In the adult incontinence market, Tender Print Pants, from Oji Nepia KK, are based on advanced printing technology and are well accepted by female users. Pictogram, introduced by Kureshia KK, is an example of the new communication approach between the manufacture and consumers.

Author: Anon

Source: Nonwovens Rev.

Issue: vol. 15, no. 1, 2004, p. 16 (In Japanese)

Uni Charm KK: launching a new nappy for paddling

Uni Charm KK, Japan, launched three new nappy products in spring 2004, Muneo Oshiri Pure, Muneo Nobiru Fit and Muneeman Mizuasobi Pants. Muneeman Mizuasobi Pants were designed for the specific use for paddling. This reflects the fact that 90% of toddlers experience frequent water paddling in the summer months. Muneeman Mizuasobi Pants are slim and super absorbent, do not swell in water; fit well to the waist and legs in the water and are designed like a swim suit. For the feminine hygiene market, Sofi Panty Liner Zero Experience and Sofi Wide Guard 350 were introduced in

the spring 2004. The former is an ultra thin fabric like pad that achieves maximum comfort during use. The latter is a pad for night use, and is leakage proof because of its special design. Lifree Suwattemo Anshin Nyotori Pad and Lifree Sawayaka Pad Syoryo-you are new in the adult incontinence care market. The former is for the users who do not have to stay in bed, and the latter is for the light symptom users.

Author: Anon

Source: Nonwovens Rev.

Issue: vol. 15, no. 1, 2004, p. 28 (In Japanese)

Nihon Tokushu Toryo KK increases the production of noise control material in China

Nihon Tokushu Toryo KK, Japan, is expanding its automotive related business in China, in particular its noise control material production. This is a response to the increasing demands from Japanese car manufactures operating in China. The production capacity will be doubled by the end of 2004, to 400,000 car/mon equivalent materials. (Short article)

Author: Anon

Source: Nonwovens Rev.

Issue: vol. 15, no. 1, 2004, pp 36-37 (In Japanese)

Teijin Kordre KK developed a environmentally friendly manmade leather

Teijin Kordre KK, Japan, has developed a new synthetic leather Loele II, with a texture extremely close to that of natural leather. The newly developed technology allows the elimination of organic solvents during the production and thus, the product is environmentally friendly. Teijin Kordre KK will make investment in a total inline production system for Loele II to reduce carbon dioxide emissions. (1 ref)

Author: Anon

Source: Nonwovens Rev.

Issue: vol. 15, no. 1, 2004, p. 38 (In Japanese)

Agriculture, construction and landscape use nonwovens and develop-

ments of their applications

The agricultural, construction and landscape industries are large potential markets for the nonwoven industry, and consumption in those industries is growing with new applications. "Betagake", a direct crop cover, is an example of the new applications. Betagake uses nonwovens with a soft and flexible texture, which are cost effective, mechanically strong, weather proof, light transmissible and breathable. Depending on the application for example: antifrost, insulation, protector against bird and insect or wind shield, specific functionality should be added to the product. Geotextile nonwovens have three functions, separation, filtration and reinforcement. General features required for geotextiles include biodegradation resistance, pressure resistance, water permeability, and resistance to sliding. Combination use with other materials, such as plastic nets, metal nets and bamboo, is very effective for geotextile applications. Nonwovens are also thought to be useful material for green planning, in which unconventional spaces such as rooftops are used for gardening. Nonwovens serve as a waterproof base with urethane coating, a water permeable drainage layer, an insulator to protect living spaces and a mulching sheet to prevent moisture evaporation. (7 fig, 2 tab, 6 ref)

Author: Takaoka Y

Source: Jpn Nonwovens Rep.

Issue: no. 4, Apr. 2004, pp 4-11 (In Japanese)

Benefits of the nonwoven anti frost sheet for ornamental cabbage harvest

Necrosis occurring around the harvesting time is a common problem in growing Habotan, an ornamental cabbage. Frost is suspected to be a major cause of this problem. It was revealed that the degree of necrosis varies depending on the species of Habotan. Among six red and three white Habotan tested, 90% of Shiro (White) Taka (round leaf) showed sign of necrosis, and approximately 50% of Shiro Suzume and Shiro Chidori (both white curry leaf) were affected. Necrosis on

Shiro Chidori was particularly severe, and 43% showed the reject level of damage for sales. Red Habotan was relatively resistant, and only 54% of Beni Chidori (curry leaf) exhibited damages caused by frost. When a long fibre nonwoven was applied as a tunnel type cover prior to the first frost, occurrence of necrosis in the test White Habotan was significantly reduced to 9% from 79%. A conventional agricultural cover showed no protective effects due to its poor insulation performance. This study revealed that frost is one of the direct cause of necroses of Habotan, and that the nonwoven tunnel provides effective protection and improves the quality of harvests. (3 fig, 2 tab)

Author: Uchiyama T

Source: Jpn Nonwovens Rep.

Issue: no. 4, Apr. 2004, pp 12-14 (In Japanese)

Non shower step floor bench for strawberry, based on a nonwoven floor water supply system

Strawberries are commonly farmed in a protective environment, such as in isolated pots on a high bench in a greenhouse equipped with an artificial watering system. However, diseases are not completely prevented and often cause poor harvests. "Non Shower Step Floor Bench" was developed to slow the progress and spread of those diseases. Since entrapped water was thought to create preferable conditions for sources of diseases such as fungi, a floor watering by tubing was applied instead of the conventional overhead shower. The individual strawberry pots are placed on a five layered base, comprising: a metal support frame, a thin black plastic film of thickness 0.005cm, a nonwoven water retention sheet, a porous mulching sheet and a water permeable root block nonwoven top layer.

Author: Koshikawa K

Source: Jpn Nonwovens Rep.

Issue: no. 4, Apr. 2004, pp 15-19 (In Japanese)

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RESEARCHER'S TOOLBOX

Focus of the R&D Effort

Within the research community there is a rather widely held maxim: If you throw more money at Research and Development efforts, good things will naturally flow from it.

Many researchers hold that the history of industrial research abounds with examples of the veracity of this principle. Unfortunately, detractors can point to about the same number of examples where this principle does not hold.

Of the many newly developed products that are introduced into the market each year, only a small fraction have any degree of success. The "market" is a fickle place, of course, and the R&D effort is only a portion of the success equation.

However, outside of the commercial marketplace there are innumerable examples of the success and failure of R&D efforts. Within the sphere of government research, the quest each fiscal year is for more research dollars, with varying promises of the multiple returns from this greater effort. Many researchers who have been associated with research grants and the granting process are adamant in their condemnation of many aspects of the system. For many grantees, the first conclusion from their research effort, even before it has begun, is that "additional research is required to better answer some of the questions still existing and to clarify some of the conclusions."

The real question therefore is – "Does success in technical ventures/businesses follow from more R&D or from better R&D?"

This question has been addressed by two scholars from the business world, with conclusions that should be studied and considered by all researchers, whether industrial or academic.

The results of this effort have been

summarized in a paper entitled "Nine Integrated Roles of Technology Development Managers," by Ian C. Macmillan, director of the Sol C. Snider Entrepreneurial Research Center at the Wharton School of Business in the University of Pennsylvania, and Columbia University's Rita Gunther McGrath.

Instead of simply throwing more money at R&D efforts, they argue that companies need to empower technology managers to adopt a business-building approach that connects technology creation to the target market.

According to the paper, success in today's globally competitive technology market is not fueled by simply more R&D effort. "Today's global competition is ruthless, and when established tech-based businesses face off against knowledgeable, low-cost competitors, the established companies will lose if they only compete on price," says Professor MacMillan. "But they are realizing that they can no longer rely solely on cost cutting and downsizing, and will instead have to find and build new opportunities."

The paper notes that coping with growth often means a transition in the management skills that are most needed, and may imply a transition in management itself. "All the techniques of effective change management come into play here, as the organization goes through a series of often-wrenching changes in people, processes and systems," the authors say. "The goal during this phase of the venturing process is no longer creating a new business, but building a proven commercial proposition into a solid new piece of the firm. Effective venture managers thus begin to focus on standardization, quality and reliability. The right people for this task are able to define a set of core key prior-

ities and manage the details of the business."

Competitive success for technology-based companies increasingly depends on speed to market and speed to profits, according to the paper, which had its beginnings in a 37-venture study of successful and failed startups involved with a major financial institution. The initial survey was followed by a five-company, 35-venture study of the process through which new ventures lead to new competencies for established organizations.

"To succeed, companies need business-building programs in which technologies generated in the labs are rapidly converted into deployable capabilities and (are) speedily commercialized and diffused into new markets," say the authors. "Rather than having technology developed in 'silos' in which R hands off to D, D hands off to market development, which in turn hands off to business development, companies need innovation programs focused on moving evolving technology through the commercialization cycle as a continuous chain of inter-related processes," the authors point out.

Essentially, they suggest removing researchers from their individual silos, and integrating them within a team that comprises multiple disciplines. The result should be a kind of orchestra of technological talent with an empowered technology manager serving as the conductor.

The model they offer describes nine major roles for a technology development manager, encompassing three major sets of activities: pipeline-building (or the identification and screening of opportunities), market entry (or the introduction of fruitful opportunities into the market) and take-off (managing the actual launch of the new projects) that are addressed at three levels of challenge: venturing (or entrepreneurial-oriented activities directed toward building new businesses), championing (ensuring that sufficient resources are allocated to the new business development) and heat-shielding (establishing a

corporate climate that encourages new business development).

Although the three stages are described sequentially, the authors acknowledge that they often do not unfold in an orderly, linear way. Thus, they say, a thriving business-building program would be likely to experience multiple specific ventures at each stage.

MacMillan and McGrath point to excellence on the part of four companies in their studies many companies over the past 10 years. These companies are Aventis Pharmaceuticals, The Procter & Gamble Company, du Pont, and General Electric.

Although this study and the principles derived therefrom focus on industrial research, the authors feel the concepts can be adapted to academic, governmental and other types of research and development efforts.

Skin Bandages

A lot of research and development effort has gone into a wide variety of bandages and wound dressings, including a very significant amount of nonwovens R&D. One by one advanced features have been introduced to assist in wound management. Many of these features have essentially been efforts to mimic natural skin, with the rationale that such would be the ideal wound dressing.

Researchers in the United Kingdom have now developed bandage materials that are basically skin-coated. Not just any skin, but the virtual skin of the victim. With the name of "Myskin," researchers at CellTran (Sheffield, UK; Internet: www.celltran.co.uk) have been developing a biological bandage, composed of a person's own skin cells.

Myskin is produced by taking a sample of skin from an individual's thigh, multiplying the number of cells in the laboratory, then depositing them on a membrane composed of medical-grade polymer. Covered with this cell-friendly coating, the membrane allows skin cells to attach and grow, providing a near-ideal wound management system,

according to the developers.

This process of preparing a individualized dressing seems a little long and cumbersome. Perhaps a generic skin could be used. After all, valves from the heart of a pig are now being employed corrective heart surgery. It would seem that nonwovens could be beneficially involved in this type of product, or that the process could be adapted to superior nonwoven substrate systems.

Laser Engraving of Polyester Fleece

Many producers of consumer and related products continually seek to unequivocally identify their product line as it is in the hands of the consumer. Hopefully, the experience of using the product has been a positive one, and the customer will resolve to buy and use that product again.

For many nonwoven products, the identity of that fabric or composite is often lost in the maze of components that go into the finished product. A newly developed technique may offer some help in this regard, specifically for polyester fleece and related high loft products.

By the use of a controlled laser beam, a selected depth of pile of a polyester fleece can be removed to create a pattern or logo on the material. Reportedly, this can be done without any discoloration. The considerable flexibility of the process provides very clean patterns and logos or designs that are very sharp, and precise in appearance and positioning.

A 10-watt CO2 laser, along with an "index" marking head (FH-Series), has proved to be very adequate in the hands of the developer of the method, Synrad, Inc. (4600 Campus Place, Mukilteo, WA 98275, USA; Tel.: 425/349-3500; Fax: 425-349-3667; www.synrad.com) This company claims to be the world's leading manufacturer of sealed CO2 lasers; they offer free process evaluations to companies with qualified applications. — INJ

PATENT REVIEW

Internet Access to U.S. Patent Application Files Now Available

The United States Patent and Trademark Office (USPTO) has reached a major milestone in maximizing electronic tools to make the patent examination process fully transparent to the public. For the first time, anyone with Internet access anywhere in the world can use USPTO's Web Site to track the status of a public patent application as it moves from publication to final disposition, and also review documents in the official application file, including all decisions made by patent examiners and their reasons for making them.

The system, known as Public PAIR (Patent Application and Information Retrieval), offers the public an advanced electronic portal to PDF viewing, downloading and printing of an array of information and documents; this includes approximately 500,000 current patent applications not covered by confidentiality laws. As new applications become eligible for publication 18 months after they are filed, they will be added to the database. It is expected that about 300,000 application files will be added annually.

"Public PAIR throws open the window to the patent examination decision-making process of every published patent application," noted Jon Dudas, Under Secretary of Commerce for Intellectual Property and Director of the USPTO. "With the click of a mouse, information that is critical to understanding how a technology is evolving is now available to innovators. This will help American industry better target its research and development investments,

and be more responsive to the demands of the national and global marketplaces."

Public PAIR builds on the USPTO's year-old electronic IFW patent application file system, which is replacing paper files and is now used by over 95% of patent examiners to review applications. Public PAIR also offers a quick-click feature for ordering certified copies of patent applications and application files.

Revision of USPTO Fees

As provided by Federal law, the fees assessed by the USPTO are adjusted each year to take into account the variations in the CPI (Consumer Price Index). This allows the office to adjust their fees annually to allow recovery of the higher costs associated with doing their business and carrying out their assigned responsibilities.

Earlier this year the proposed increases in the USPTO fee schedule was posted for public comments. No comments were received, with the result that these fee increases will be established. Effective date for the new fees is October 1, 2004.

In general, the fees have been increased by the amount of 3.01%, representing the derived increase in the CPI. Some "rounding" of these amounts is done to make the fees a convenient amount. Also, for normal patents, the fees are reduced by 50% for those applicants that meet the requirements to be classified as "independent inventors, small business concerns and nonprofit organizations."

In general, the filing of a Utility Patent by a small entity is now \$395, and twice that amount for others that do not qualify as a small entity. There are additional fees assessed for other office actions, of course, but this can provide the basis for considering the initial steps in a patent filing.

NONWOVEN PATENTS OF INTEREST

Stretchable laminate: US 6,750,161 (June 15, 2004); filed: February 19, 2002. Assignee: Polymer Group, Inc. (North Charleston, SC). Inventors: Michael Putnam, Sergio Diaz de Leon, Herbert Hartgrove.

A stretchable nonwoven laminate is disclosed in this patent. The stretchable nonwoven laminate is formed from a hydroentangled nonwoven fabric exhibiting cross-direction extensibility and recovery. The fabric comprises a nonwoven web of staple length fibers of about 0.8 to 3.0 denier having a basis weight of about 1.0 to 4.0 osy. An elastomeric binder composition is uniformly applied to the nonwoven web, which imparts the desired elasticity to the web; after such a binder application the fabric exhibits at least about 50% CD extensibility, and at least about 90% recovery in the CD. The nonwoven web may comprise synthetic fibers, natural fibers, and blends thereof, as well as continuous filaments. The binder elastomeric composition may comprise polyurethane or polyvinylchloride resin. The laminate provides a highly conformable and aesthetically pleasing leather-like product.

Melt processable poly (ethylene oxide) fibers; US 6,750,163 (June 15, 2004); filed: April 10, 2001. Assignee: Kimberly-Clark Worldwide, Inc. (Neenah, WI). Inventors: James Hongxue Wang, David Michael Schertz.

Melt processable polymer fibers and methods for production of flushable nonwoven fabrics from these fibers is disclosed. The nonwoven fabrics can be

PATENT REVIEW

produced by either the spunbond or the meltblown process using conventional melt processing methods. The fibers comprise a poly(ethylene oxide) polymer, preferably poly(ethylene oxide) modified by grafting polar vinyl monomers, such as poly(ethylene glycol) methacrylate and 2-hydroxyethyl methacrylate, onto the poly(ethylene oxide) backbone. The disclosed modified poly(ethylene oxide) has improved melt processability in the stated nonwoven processes, and can be used to melt process poly(ethylene oxide) fibers of thinner diameters. The fabrics from these grafted fibers have flushability, making them very useful in a range of sanitary products.

Wet-laid nonwoven web from unpulped natural fibers and composite containing same; US 6,762,138 (July 13, 2004); filed: July 14, 1999. Assignee: Ahlstrom Windsor Locks LLC (Windsor Locks, CT). Inventors: Rui B. Ferreira, Joseph A. Rieger.

Wet-laid nonwoven webs having good mechanical reinforcement properties are provided by employing unpulped vegetable fiber bundles as the predominant fiber component in a typical wetform nonwoven process. Suitable fibers are cordage fibers, including sisal, abaca, henequen, kenaf and jute fibers. The unpulped fiber bundles have a modulus of elasticity of about 2.5×10^{-6} and a chopped fiber length of about 25 mm. Composites of these webs from such unpulped fiber webs combined with cellulosic and spunbond layers produce sheets that can find application as thermoformed vehicle interior trim products.

Thermo-mechanical modification of nonwoven webs; US 6,746,978 (June 8, 2004); filed: March 22, 2000. Assignee: None. Inventor: Gregory F. Ward.

This patent is directed to a heat bonded thermoplastic or a similar partially thermoplastic nonwoven web comprising at least 70% thermoplastic fibers, which has been thermo-mechanically treated while under low strain rate ten-

sion and controlled temperature. The temperature of the treatment is no more than 70 degrees F. above the fiber plastic point. A nonwoven web so treated shows significant improvement to conformability and softness. More importantly, the treatment imparts a high degree of commercially valuable elasticity, without large changes in average pore size or pore size distribution; the latter changes can decrease softness and conformability of such a fabric. The resultant webs develop elasticity in only one direction, but by using the two embodiments of the disclosure, it is possible to create elasticity in the web in both the machine or cross machine directions.

The process works with meltblown, spunbond, and carded thermally bonded nonwovens, as well as with laminates containing two or more of these nonwoven webs, as well as with laminates of these nonwovens and thermoplastic films.

Imaged nonwoven fire-retardant fiber blends and process for making same; US 6,764,971 (July 20, 2004); filed: March 2, 2001. Assignee: Polymer Group, Inc. (North Charleston, SC). Inventors: Karl Dewayne Kelly, Thomas A. Hill, Francois Lapierre, Spiro De Luca, Sergio Diaz de Leon.

This patent is directed to a durable and imaged flame-retardant nonwoven fabric produced by the spunlace hydroentanglement process. It has been discovered that when a melamine/aramid fiber blend is hydroentangled and a 3-dimensional image imparted, thermal protection to the skin at lower basis weights are maximized, thereby providing significantly improved wearer comfort and safety. It is disclosed that the use of melamine fibers, when blended with aramid fibers in relative ratios of between 45 weight percent and 55 weight percent provides improvement in Thermal Protective Properties (TPP) and also affords a convenient and relatively inexpensive way to form a functional nonwoven fabric with excellent performance properties.

In a preferred embodiment, a carded and randomized staple fiber blend of these fibers is hydroentangled with high-pressure water jets, followed by imaging on a three-dimensional surface to provide a spunlace nonwoven fabric with a basis weight range of between 65 gsm and 150 gsm, a resultant air permeability greater than 65 CFM per gram fabric weight per cubic centimeter and a TPP rating greater than 11.4 cal-sec per square centimeters.

Fibrous electret polymeric articles; US 6,759,356 (July 6, 2004); filed: June 28, 1999. Assignee: Kimberly-Clark Worldwide, Inc. (Neenah, WI). Inventor: David Lewis Myers.

A thermoplastic polymer electret material comprising a porous substrate of a blend of a first thermoplastic polymer nonwoven web and from 0.1% to about 25% by weight, of a compatible telomer. The first thermoplastic polymer is selected from the group consisting of polyolefins, polyamides, polyesters, polyurethanes, polydienes, polyols, polyethers and polycarbonates. The miscible thermoplastic telomer has a functional end group selected from the group consisting of aldehyde, acid halide, acid anhydrides, carboxylic acids, amines, amine salts, amides, sulfonic acid amides, sulfonic acid and salts thereof, thiols, epoxides, alcohols, acyl halides, and derivatives thereof. The nonwoven web is selected from the group consisting of meltblown fiber webs, spunbond fibers webs, hydroentangled webs, air-laid and bonded-carded webs. The porous substrate is electrostatically charge and is well suited for use in filter media, sterilization wraps, face masks, dust wipes and the like.

Mixed denier fluid management layers; US 6,781,027 (August 24, 2004); filed: December 14, 2001. Assignee: Kimberly-Clark Worldwide, Inc. (Neenah, WI). Inventors: Christopher Dale Fenwick, Roland Columbus Smith, Jr.

A new and improved "surge" or "intake" layer designed to provide tem-

PATENT REVIEW

porary liquid holding capacity in various absorbent hygiene products is described. The new structural material described consists of a composite nonwoven fabric made of a homogeneous blend of large and small denier synthetic fibers. The nonwoven material is made from a mixture of fibers of different denier, wherein the first denier fiber has an average denier at least 3 denier less than a second fiber and the second fiber has an average denier between 4 and 15; the material has a basis weight between 30 and 200 gsm. Although various nonwoven production methods are claimed to allow manufacture of the innovative material, the inventors prefer the use of the bonded carded web (BCW) method. This provides a relatively easy method to control the denier of the component fibers and also provides considerable uniformity and flexibility in manufacture.

A preferred composition comprises the first denier fiber present in an amount of about 60 weight percent and the second denier fiber can be present in an amount of about 40 weight percent. The first denier fiber may be a sheath/core bicomponent fiber selected from the group consisting of (1) polyethylene/polypropylene, (2) polyethylene/polyethylene terephthalate and (3) co-polyethylene terephthalate/polyethylene terephthalate bicomponent fibers. The second denier fiber is preferably a polyester fiber.

High-absorbent polyvinyl alcohol fibers and nonwoven fabric comprising them; US 6,783,852 (August 31, 2004); filed: August 27, 2003. Assignee: Kuraray Co., Ltd. (Kurashiki, Japan). Inventors: Shinya Inada, Satoru Kobayashi, Junichi Taniguchi, Suguru Mizuki, Hideki Kamada, Masakazu Nishiyama.

Absorbent nonwoven fabrics can be produced from a highly absorbent polyvinyl alcohol fiber. The fiber is prepared from a water-soluble polyvinyl alcohol resin which satisfies the following requirements: (1) a water absorption in water at 30 degrees C. ranging from

10 to 100 times the weight of the fiber; (2) a fiber diameter in water at 30 degrees C. as a result of absorbing water ranging from 2 to 10 times the diameter of the fibers not having absorbed water; and (3) melting point ranging from 160 to 220 degrees C., and a heat of fusion ranging from 40 to 100 J/g. The absorbent nonwoven can be produced from such a polymer via the spunbond or meltblown nonwoven process.

Bicomponent fibers comprising a thermoplastic polymer surrounding a starch rich core; US 6,783,854 (August 31, 2004); filed: November 14, 2002. Assignee: The Procter & Gamble Company (Cincinnati, OH). Inventor: Bryan Bond.

A bicomponent fiber particularly suitable for nonwoven webs and disposable absorbent products converted therefrom is disclosed in this patent. The fiber comprises one non-starch thermoplastic polymer component and one thermoplastic starch component, the latter comprising a destructured starch and a plasticizer. The thermoplastic polymer component surrounds the thermoplastic starch component in a typical bicomponent fiber configuration. The nonwoven web is produced from such a fiber by a variety of selected nonwoven processes.

— INJ

NONWOVENS NET

Availability of Web Addresses

Use of the World Wide Web has increased so much in recent times that concern has been expressed about the availability of domain addresses in the future. In view of the fantastic growth, a logical question is: "With the demand for such addresses increasing every year, is it possible that the system will simply be overwhelmed?"

This question is really the concern of ICANN, the U.S. body that oversees the allocation of Web sites on a global basis. ICANN (Internet Corporation for Assigned Names and Numbers) has announced within the past few weeks that steps have been taken to assure that the system will be capable of expanding fast enough and to such an extent that any allocation problems in the future are not very unlikely.

ICANN, based in Los Angeles, currently uses a system identified as IPv4. They have reported that about two-thirds of the 4.3 billion Internet addresses currently available on this system have been assigned and are essentially used up. To remedy this situation, ICANN has added what they consider to be the next generation protocol to its root server systems. This new system is identified as IPv6. Mr. Vinton Cerf, Chairman of ICANN, recently indicated that IPv6 can magnify the system capacity by some 25,000 trillion trillion times. That sounds like a rather substantial increase.

To ensure that any bugs or system errors are weeded out, Mr. Cerf has indicated that the new IPv6 system will run parallel to IPv4 for about 20 years. This should assure a smooth transition, and allow for all of the expansion and growth anticipated, and then some!

Exploiting The Web

Almost every researcher has experienced the situation where web surfing has lead to an interesting idea, a new twist, or a different way of viewing a problem. Sometimes this technique of "thinking outside the box" can be of practical value, even vital in developing new insights.

However, this practice can also be a simple excuse to justify entertainment on the web, or a way to satisfy an idle curiosity. When this is the case almost any Search Engine will do!

Oftentimes, however, there is a need for a specific answer to a very specific question. In such cases the question is generally very simple and direct, and the needed answer is also short and precise. For such situations, what you really need is often a specialized tool for a specialized function.

For factual questions of this type, there are Search Engines that can really minimize the search time. This often involves a searching tool that handles natural language queries, such as Ask Jeeves (<http://www.ask.com>). This particular engine has been improved significantly over the past couple of years.

Another one to consider is BrainBoost (<http://www.brainboost.com>). This site has the capability of handling natural language questions, and also offers a quick opening feature. Click on their "Snap Open" link on the search results page and BrainBoost will display the web page with the answer and will scroll down to the location of the text on that page.

There are some quick "look-up" questions that naturally suggest an encyclopedia, an almanac or other ready-reference source. In such cases it may be helpful to consider InfoPlease

(<http://www.infoplease.com>) or a similar reference work. Other useful sites of a broad nature may include the following:

- Encyclopedia Britannica - Website containing the entire Encyclopedia Britannica on a free basis.

(<http://www.britannica.com>).

- Dictionary - Merriam-Webster Dictionary and Thesaurus, with other features that may be expected from a dictionary; (<http://www.m-w.com>).

- Dictionary - Dictionaries of Foreign Languages, Multilingual Dictionaries, specialty English dictionaries, Thesauri and other vocabulary aids, Language identifiers and guessers, An index of dictionary indices, on-line grammars and linguistic fun. Cover over 150 different languages. An excellent site for this purpose. (<http://www.yourdictionary.com>).

What about questions that might best be answered by a book, rather than a web site? An excellent Search Engine for this possibility is A9.com (<http://a9.com>). This system uses Google for web search results, but also includes Amazon.com's "Search Inside the Book" feature in the search results page. If you have an account with Amazon.com, you can view the portions of a page where the search words or the search phrase shows up in the books.

An excellent search tool for science-related information is Scirus (<http://www.scirus.com>), a powerful combination of a web search engine and a database of published scientific articles. Like a number of Search Engines, Scirus offers a "Refine Your Search" option that lists words and phrases that frequently appear in the retrieved sources. This feature can often help a searcher narrow the search, with good results and a lot of saving of search time.

How do you find these specialized research tools? Two annotated directories of search engines, directories and databases are GeniusFind (<http://www.geniusfind.com>) and Beaucoup (<http://www.beaucoup.com>).

It should be realized that GeniusFind is not a meta search engine; you cannot conduct a search of the web through GeniusFind. Rather, you can drill down through its subject categories to locate specialized resources that focus on anthropology, for example.

Beaucoup, on the other hand, does function as a meta search engine; you can search 10 search engines at one time, or you can click on one of the subject links from the main page of Beaucoup to find specialized search tools and databases on specific topics.

Every serious researcher will eventually want to develop a database that covers the specific sites, search engines and internet areas that are particularly useful in his/her research work. For one nonwovens researcher, the following categories were developed over a period of years:

Every researcher will no doubt have additional categories to add to such a list, representing web sites and cate-

gories that have proved especially useful in the past, along with specialized categories unique to the areas being researched. The important principle is that personal memories can be short, and a knowledge of a particularly useful site can be invaluable. Don't rely on memory; have a system to easily record and retrieve.

E-Mail Emergency Backups

One of the many lessons learned from the 9/11 terrorist attacks is that jammed phone lines and the many office closures can bring communications and related business activities to an abrupt halt. Another lesson learned from the desperation of that event was the value of free E-mail web sites. For many people, this seldom-used and infrequently checked back-up e-mail address became a vital lifeline to the rest of the world.

There are four sites that offer varying degrees of the features that are consid-

ered to be the most vital:

- East of Use.
- Reliability
- Breadth of features
- Premium services

Although they vary in the ratings of these four site features, all four of the well-know web sites that offer free E-mail service should be considered when pursuing this alternative back-up approach. These four web sites include:

- Hotmail - a Microsoft that is available through the MSN.com portal.
- Yahoo Mail - this is a very straightforward sight, offering several premium features on a fee-basis.
- Lycos Mail - simple, easy and fast, although it may be cluttered with ads.
- Mail.com - somewhat limited in offerings, which can be expanded for a fee.

All of these sites appear to be adequate for basic E-mail purposes, with Hotmail rated as the most likely to be useful in an emergency. With a little study, the most appropriate for your specific use can be discerned. Let's hope it will not be subjected to another 9/11 testing.
— INJ

INDEX OF POTENTIALLY USEFUL SITES

1. Associations and Industry Centers
2. Business-to-Business (B2B) Sites
3. Conferences and Exhibitions
4. Consultants
5. Converted Products and Producers
6. Directories, Resources, and Information Sources
7. Equipment, Machinery, and Instruments
8. Financial, Investment and Business Sites
9. Laboratory Equipment, Laboratory Services Sites
10. Marketing, Sales, Retail Sites, B2C-Commerce
11. Medical, Healthcare, and Related Sites
12. Nonwoven Producers, Fiber Producers
13. Patents, Patent Source Material, IP Law and Services
14. Press, News and Publications
15. Product and Machinery Suppliers
16. Services, Commission Activities
17. Travel, Accommodations
18. Universities, Textile & Related Departments, Research Institutes
19. Sanitary Product and Producers Sites
20. Sanitary Product Retail/Mail Sites
21. Search Engines
22. U.S. Government Sites
23. Miscellaneous Sites

NONWOVEN CALENDAR

September 2004

Sept. 20-23, 2004. **International Nonwovens Technical Conference (INTC 04)**. Westin Harbour Castle Hotel, Toronto, Canada. The INTC 04 meeting will be held in Canada for the first time. For more information, contact: INDA, P.O. Box 1288, Cary, NC; Tel.: 919/233-1210; Fax: 919/233-1282; Internet: www.inda.org/events/.

Sept. 28-30, 2004. **Advanced Fiber Science**. Textile Research Institute, Princeton, NJ. Special Guest Lecturer: Dr. Joseph Spruiell, University of Tennessee, Knoxville, TN. For more information, contact: Course Registrar, TRI/Princeton, 601 Prospect Avenue, P.O. Box 625, Princeton, NJ 08542; Tel. 609/430-4828; Fax: 609/683-7149; Internet: www.triprinceton.org.

Sept 29-Oct. 1, 2004. **OUTLOOK 2004 - EDANA Personal Care Products Conference**. Monaco. For additional information, contact: Mr. Philip Preest, Marketing Manager, EDANA, 157 Avenue Eugene Plansky, B-130 Brussels, Belgium; Tel.: 32+2/734-9310; Fax: 32+2/733-3518; Internet: www.edana.org.

October 2004

Oct. 3-6, 2004. **ASTM Committee D-13 pm Textiles**. Omni Shoreham Hotel, Washington, D.C. For more information, contact: Len Morrissey, ASTM, W. Conshohockern, PA.; Tel.: 610/832-9726; Fax: 610/832-9555; Internet: www.astm.org/commit/d13.htm.

Oct. 4-8, 2004. **INDA Automotive Products Development Course**. INDA Headquarters, Cary, NC. For more information, contact: INDA, P.O. Box 1288, Cary, NC; Tel.: 919/233-1210; Fax:

919/233-1282; www.inda.org/events/. This event has been rescheduled from the previous dates of November 1-5, 2004.

Oct. 10-14, 2004. **INSIGHT 2004**. Hotel Hilton Austin, Austin, TX. For more information, contact: Marketing Technology Service, Inc., 4100 South 7th Street, Kalamazoo, MI 49009; Tel.: 269/375-1236; Fax: 269/375-67101; www.marketingtechnologyservice.com

Oct. 11-13, 2004. **2004 Annual Fiber Society Meeting and Technical Conference**. Cornell University, Ithaca, NY. A symposium on AAdvanced Materials and Processes@ will be held in conjunction with this meeting and conference. For more information, contact Professor Kay Obendorf (sko3@cornell.edu) or Professor Anil Netravali (ann2@cornell.edu). Internet: www.the-fibersociety.org.

Oct. 19-21, 2004. **Porous Materials Characterization**. Textile Research Institute, Princeton, NJ. Special Guest Lecturer - Professor Kenneth Sing, Brunel University & Exeter University, UK. For more information, contact: Course Registrar, TRI/Princeton, 601 Prospect Avenue, P.O. Box 625, Princeton, NJ 08542; Tel. 609/430-4828; Fax: 609/683-7149; Internet: www.triprinceton.org.

Oct. 25-27, 2004. **INDA Needlepunch 2004 Conference**. Savannah Marriott Riverfront, Savannah, Georgia, USA. This conference will have a New Technology Showcase. For more information, contact: INDA, P.O. Box 1288, 1200 Crescent Green, Suite 100, Cary, NC 27511; Tel.: 919/233-1210; Fax: 919/233-1282; www.inda.org/events/.

Oct. 26-27, 2004. **EDANA FILTRET Filtration Conference and Exhibition**. Kempinski Airport Hotel, Munich, Germany. For more information, contact: Mr. Jean-Michel Anspach, Technical & Education Director, EDANA, 157 Avenue Eugene Plansky, B-130 Brussels, Belgium; Tel.: 32+2/734-9310; Fax: 32+2/733-3518; Internet: www.edana.org.

Oct. 26-27, 2004. **Analytical Laboratory Expo**. An online, virtual Conference and Exposition related to microscopy, image analysis, chromatography and spectroscopy only. For more information, contact: Jennifer Miller, Associate Editor, Reed Business Information, 100 Enterprise Drive, Suite 600; Box 912, Rockaway, NJ 07866; Tel.: 973/920-7052. Preshow Internet site: www.analyticalabexpo.com, which provides for downloading further preliminary information and a demo.

Oct. 27-29, 2004. **IFAI Expo 2004**. David L. Lawrence Convention Center in Pittsburgh, PA. For more information, contact: IFAI, Roseville, MN; Tel.: 651/225-6942; Fax: 651/631-9334. E-mail: confmgmt@ifai.com. Internet: www.ifaiexpo.info. A conference entitled AMedical Textiles@ will be held on Oct. 27-26, 2004, in connection with this Conference.

November 2004

Nov. 1-5, 2004. **INDA/NCSU Manufacturing Process Fundamentals In Nonwovens Training Course**. Courtyard Cary, Cary, NC 27511. CEU Credits - 3.6. For more information, contact: INDA, P.O. Box 1288, Cary, NC; Tel.: 919/233-1210; Fax: 919/233-1282; Internet: www.inda.org/events/.

Nov. 15-18, 2004. **Eastern Analytical Symposium**. Somerset, NJ. The premier meeting on analytical matters, including instrumentation, products, services, short courses, workshops and symposia. For more information, contact: Eastern Analytical Symposium, P.O. Box

NONWOVEN CALENDAR

633, Montchanin, DE 19710; Tel.: 610/485-4633; Fax: 610/485-9467; Internet: www.eas.org .

Nov. 16-18, 2004. **INDA Nonwovens Training Course.** INDA Headquarters, 1200 Crescent Green, Suite 100, Cary, NC, 27511, USA. For more information, contact: INDA, P.O. Box 1288, Cary, NC; Tel.: 919/233-1210; Fax: 919/233-1282; Internet: www.inda.org/events.

Nov. 18-20, 2004. **13th Annual TANDEC Nonwovens Conference.** University of Tennessee Conference Center, Knoxville, Tennessee. For more information, contact; TANDEC Conference Textiles and Nonwovens Development Center, The University of Tennessee, Knoxville, TN 37996; Tel: 865-974-6298; Fax: 865-974-3580; Internet: <http://tancon.utk.edu> .

Nov. 23, 2004. **4th Annual TTNA Conference - Advanced Materials for the Environment and the Production of Energy.** Aitken Hill Conference Centre, Yuroke, Victoria, Australia (Melbourne). For more information, contact: Lorraine Gierck, Technical Textile and Nonwoven Association, TTNA Secretariat, Level 2, 20 Queens Road, Melbourne, VIC 3004, Australia; Tel.: 61+3/9866-6643; Fax: 61+3/9866-6434.

December 2004

Dec. 5-9, 2004. **Consumer Specialty Products Association Annual Meeting.** Fort Lauderdale, Florida, USA. For more information, contact: Consumer Specialty Products Association, 900 - 17th Street, Washington, D.C. 20006. Tel.: 202/872- 8110; Fax: 202/872-8114. Internet: www.cspa.org .

Dec. 7-9, 2004. **Filtration 2004 International Conference & Exposition.** Pennsylvania Convention Center, Philadelphia, PA. This event will feature for the first time, co-location events by INDA and the American Filtration and Separation Society (AFS).

Although INDA and AFS will share the same location, each association will develop its own conference program. The AFS program will focus on technical aspects of the filtration process, while INDA's focus will be on markets, new business opportunities and filtration end uses. For more information, contact: INDA, P.O. Box 1288, 1200 Crescent Green, Suite 100, Cary, NC 27511; Tel.: 919/233-1210; Fax: 919/233-1282; Internet: www.inda.org/events/ .

January 2005

Jan. 16-19, 2005. **Vision 2005.** Sheraton New Orleans, New Orleans, Louisiana, USA. INDAs annual Consumer Products Conference. For more information, contact: INDA, P.O. Box 1288, 1200 Crescent Green, Suite 100, Cary, NC 27511; Tel.: 919/233-1210; Fax: 919/233-1282; Internet: www.inda.org/events/ .

Jan. 21-Feb. 4, 2005. **INDA/NCSU Automotive Engineered Fabrics - Product Development Course.** Cary, NC. For more information, contact: INDA, P.O. Box 1288, 1200 Crescent Green, Suite 100, Cary, NC 27511; Tel.: 919/233-1210; Fax: 919/233-1282; Internet: www.inda.org/events/ .

March 2005

Mar. 20-22, 2005. **INDA Annual Meeting.** Hyatt Regency Grand Cypress Resort, Orlando, FL. For more information, contact: INDA, P.O. Box 1288, 1200 Crescent Green, Suite 100, Cary, NC 27511; Tel.: 919/233-1210; Fax: 919/233-1282; Internet: www.inda.org/events/ .

April 2005

Apr. 12-15, 2005. **INDEX 05 International Nonwovens Conference and Exhibition.** Geneva, Switzerland. For additional information, contact: Mr. Philip Preest, Marketing Manager, EDANA, 157 Avenue Eugene Plansky, B-130 Brussels, Belgium; Tel.: 32+2/734-9310; Fax: 32+2/733-3518; Internet: www.edana.org .

November 2005

Nov. 15-17, 2005. **Filtration 2005.** Navy Pier, Chicago, IL. For more information, contact: INDA, P.O. Box 1288, Cary, NC; Tel.: 919/233-1210; Fax: 919/233-1282; Internet: www.inda.org/events/ . — **INJ**