How to Make the ‘Right’ Disposable Hygiene Product?

Avery Dennison
BCH
Curt G. Joa
Fibertex Personal Care
Fulflex Elastomerics
Henkel
Optima nonwovens
Osprey Corporation
Sandvik Hyperion

Panel of Distinguished Speakers
From the MD’s Desk

"Make hay while the sun shines” an old proverb may hold true in India as India prepares to take the manufacturing sector’s share in the Indian GDP from the existing 16% to 25%.

Mr. Samir Gupta, MD, BCH

India is on the move! And also in a hurry to do things & get things done.

The confidence is showing in the people over tea time chats and in serious business decision making. The Nifty and Sensex are up by more than 25% since January 2014 owing to the investments made by foreign investors. In the recent words of Facebook founder Mark Zuckerberg, “India is more than just a big market. It is a test bed where I hope to develop tools and ideas that can be used by the world”. The buzz around smart cities created after the Modi government announced an initial investment of $1.2 billion to create 100 smart cities in India has multinationals lining up for a slice of this pie. And the story goes on and on.

The recently launched MAKE IN INDIA campaign by our honorable Prime Minister Shri Narendra Modi has created a flutter in the manufacturing sector. Domestic and multinational companies are seriously looking at all aspects of the feasibility of manufacturing in India in order to make the most of the opportunities which any developing country sees once in its life time. “Make hay while the sun shines” an old proverb may hold true in India as India prepares to take the manufacturing sector’s share in the Indian GDP from the existing 16% to 25%.

The Prime Minister is leaving no stone unturned to change the ‘not so good’ image about India by vowing to make India corruption free and clean. The positive sentiments are also clearly visible in our industry as well and could be very well seen during the recently concluded BCH event “How to make the right disposable hygiene product” that was held on the 10th September 2014 in New Delhi at the Leela Palace hotel. This event witnessed the presence of more than 90% of the Indian disposable hygiene industry. The first time ever award ceremony was a good surprise for the industry and the 4 companies that were rewarded for their outstanding contribution reciprocated their recognition with great happiness.

BCH too is gearing up for many more endeavors in order to play its role in the industry as all sectors are interlinked. For now, looking forward to see you all at the ICTN 2014 in New Delhi and the ANFA Nonwovens Conference in Japan in November.

Hope you all enjoy reading this issue. Wishing all a very happy Diwali.
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Reflections

I have read your cover story regarding the Three-Dimensional Structures and Their Applications. It is a good and comprehensive review of the latest developments of this topic area. On the whole I am quite happy with your review

Professor Subhash Anand,
University of Bolton

TechTex India is providing outstanding coverage of both the developed and emerging engineered fabrics businesses in India. It is a great information source for anyone interested in entering the Indian market

Raymond A. Dunleay
Fitesa

This is a great magazine. The ‘Stay Cool’ article has products of great interest

Dilshad Master,
Mercury Himalayan Exploations

www.bch.in
How to Make the ‘Right’ Disposable Hygiene Product?

It’s easy to play any musical instrument: all you have to do is touch the right key at the right time and the instrument will play itself – Johann Sebastian Bach

The Indian hygiene industry is experiencing an unprecedented growth due to innumerable factors. India’s population which constitutes of 1 billion plus people is waking up to an increased consumerism of products of safety, hygiene and convenience thus outlining a huge market potential for many consumer products which still do not exist in the country. The demographic situation of the country is of great importance to the world as it poses to be a huge market in the coming years.

Hygiene products like Baby Diapers, Sanitary Napkins, Adult Incontinence Products and Wipes catering to world markets are also being adopted into the lifestyles of the masses in India which may not have been the case earlier. Penetration can be witnessed in the market to the extent of 20% in case of sanitary napkins, only 6 to 7% in case of baby diapers and has just started in case of adult diapers and underpads. The FMCG (Fast Moving Consumer Goods) giants too are keen to introduce new products in the Indian retail scenario which is very evident. Retailers, product convertors or raw material producers have suddenly got more interested and want to be a part of this growing industry in India.

At a time when the Indian manufacturer is ready to grab every opportunity to feed a growing demand, it becomes quintessential to know about advanced technologies and important prerequisites for decision making. They need to ask themselves whether they are heading in the right direction or not? Do they really know what they should make, why they should make and most importantly how they should make? Is the quality of the product that they are producing the right one to sustain in a globally competitive environment? What is the right technology and the right raw materials to use? Is their product praiseworthy? Is their investment strategy long term?

Addressing the above need, BCH successfully conducted a technical symposium – How to Make the ‘Right’ Disposable Hygiene Product?’ on the 10th of September 2014 at Leela Palace hotel in Chankyapuri, New Delhi along with a consortium of international companies which mainly constituted either machine manufacturers or raw material suppliers such as Avery Dennison, Curt G. Joa, Fibertex Personal Care, Fulflex, Henkel, Optima, Osprey and Sandvik.

What set this seminar apart is the singular experience gained by the attendees of having a unique opportunity to interact with experts in the field enabling them to gain new insights into the industry with a special focus on the Indian market. The inquisitiveness of the Indian businesses to explore this growing segment was evident from the developments that have taken place in the last few years.

What was particularly interesting in this symposium was the impressive presence of more than 100 attendees which comprised of manufacturers (convertors) of feminine hygiene products, baby diapers & adult incontinence products as well as the new and aspiring entrants, who were eager to hear about the latest developments in this sector and understand the ‘wrongs’ and the ‘rights’ that may take place. To name a few, there was representation from Procter & Gamble, SCA, Unicharm, Nobel Hygiene, Emami, HLL Lifecare and many more noteworthy established companies of India.

Mr. Samir Gupta
Managing Director
BCH
The symposium had a very positive feeling with Ms. Ritika Gupta from BCH, who set the tone of the event by appraising the current market scenario for the disposable hygiene products in India followed by Mr. Michael Gritzbach from Curt G. Joa who shared his insight about the importance of right decision making when it comes to investing in machinery for feminine hygiene products.

The succeeding session began with Mr. Christoph Ritter from Osprey, who conferred about clean & efficient air – system design for effective plant running and Mr. Ajay Sahni from Fibertex Personal Care, who spoke about nonwovens that are ideal for hygiene products. Thereafter Mr. Michel Verstraeten from Henkel gave a brief about operational excellence in hot melt utilization during the course of manufacturing.

The session started with the presentation from Mr. Michael Gritzbach from Curt G. Joa who discussed about the importance of right decision for investing in machinery for diapers (baby & adult). After that Mr. Patrick Curtin & Mr. Daniel Marchal both from Fulflex talked about the importance of the perfect fit and comfort which can be brought about through elastics. Ms. Birgitta Van den Driessche from Avery Dennison focused on the innovations in production and the importance of the right closure systems for diapers.

The summing up session had Mr. Paolo Ocleppo from Sandvik Hyperion putting across the value added cutting solutions which are again very important and Mr. Wilfried Laser from Optima nonwovens who aquainted the audience with the perfect packaging for disposable hygiene products.
Award Distribution

One major highlight of the event was the award ceremony. Stalwarts of this Industry in India were felicitated with a heartfelt applause during the event. The awards were presented by eminent personalities from this industry. Mr. Samir Gupta, Managing Director of BCH personally addressed the awardees for their outstanding performance and significant contribution to this dynamic absorbent hygiene industry of India. The four awards announced were as follows:

Social Responsibility – Best Practices –

This award went to Bella Premier Happy Hygiene Care Pvt. Ltd. & was received by Ms. Agnieszka Wronkowska, Sales & Marketing Director for India. The award was presented by Mr. PC Vaish, Director Finance, National Textile Corporation Ltd.

Best Indian Private Label Initiative –

This award went to Nobel Hygiene Ltd. and was received by Mr. Kamal Johari, Managing Director. The award was presented by Mr. David Ankenbrandt, CEO, Osprey Corporation.

Market Leaders in Quality –

This award went to Procter & Gamble Hygiene & Health Care Limited and was received by Mr. Amaranna Angadi, Manager – Production. The award was presented by Mr. Sebastian Sommer, R&D Head, Reifenhaeuser Reicofl.

Market Evolution through Product Differentiation & Innovative Marketing Strategies –

This award went to Unicharm India Pvt. Ltd. & was received by Mr. Yukihiro Kimura, Managing Director. The award was given by Mr. Samir Gupta, Managing Director, BCH.
Table Top Exhibition

The table top exhibition which was held in a separate hall offered a unique business opportunity for participants to see displays of the talked about products and offerings and casually network amongst the gathering. All the 8 speaker companies was given the opportunity to display and discuss about their product offerings.

Networking & Evening Cocktails

The evening witnessed a very relaxed atmosphere during the cocktails at the terrace of the beautiful Leela Palace Hotel in New Delhi. For further strengthening of decisions and to generate a positive feeling for existing and new investments in this field, the breaks and the cocktail evening offered a great opportunity for one to one knowledge dissemination in a relaxed atmosphere.
Some recent headlines concerning the disposable hygiene industry of India, that have hit the news are a testimony to the fact that the time for real growth has come. Global and local players have become active and are trying their best to find their share of space in this industry which is growing exponentially. More and more green field projects or expansions are being announced both in the raw materials category and the converted products category. Some of the major headlines that have accelerated the heartbeat of this industry are elaborated further in this article.

Recent Headlines... Some Food for Thought

In my opinion current decade will see the fastest growth in the hygiene segment as all the big players of the world are here. We are living in very exciting times as far as our industry is concerned. Government also is focusing on technical textile sector as a result of which more and more raw material players will start manufacturing in India.

These recent happenings are further endorsing our views and projections for this industry. Stakeholders are hungry for good information and knowledge dissemination & we really think, this is a time for decision makers to get active.

Mr. Kamal Johari
Managing Director
Nobel Hygiene

Mr. Samir Gupta
Managing Director
BCH
Headlines - Business Standard

Unicharm India - Setting up New Manufacturing Facility at Sri City

Japan based baby care products manufacturer Unicharm Corporation is setting up its manufacturing facility at Sri City Special Economic Zone with an investment of Rs 250 crore. The company which was established in 1961 at Tokyo, Japan, is one of the world's leading companies in manufacturing and distribution of baby care products, feminine care products and pet care products. In an auspicious ground-breaking ceremony held, the Unicharm India formally started the construction work of its new plant. Miyabayashi, CMD, Unicharm and Kimura, MD, Unicharm India performed Bhoomi pooja and laid the first stone of foundation. Unicharm had signed a lease agreement with Sri City for utilising 40 acres of land for its new production facility.

The Unicharm factory at Sri City will be conceived in phases at a total investment of Rs. 250 crore. The initial phase of the factory is planned to be completed by July 2015. During this phase it will offer jobs for around 400 persons. In its final phase of operation it will require 1000 persons with a preference to women workers. Unicharm India is a wholly-owned subsidiary of Unicharm Corporation, a Japanese manufacturing company of health & hygiene products. In 2008, Unicharm set up its local head office at Gurgaon and also a production facility at Majrakath in Rajasthan. Miyabayashi said that by 2020 Unicharm targets to have a total turnover of Rs 90,000 crore and in this direction we are expanding our business in India. The company choose Sri City for various advantages, including its infrastructure facilities, proximity to international air and sea ports will greatly facilitates our imports and exports. Availability of extensive land at Sri City is an additional advantage for expanding their plant in phases”.

Source: Business-Standard

Headlines - Business Line

Procter & Gamble India - Setting up New Manufacturing Unit in Telangana

The new Procter & Gamble Home Products India's manufacturing unit is located in Kottur in Mahabubnagar district about 36 km from Hyderabad. The plant stated to be their largest in Asia has been set up with an outlay of Rs. 900 crore is spread across a 170 acre site. The Chief Minister has assured them of State support in their plans to expand their facility. Part of the diversified P&G, one of the largest fast growing commercial products company, its presence in India spans beauty and grooming, household care and health and well being segments.

Shantanu Khosla, MD & CEO, P&G India said "We are delighted to start operations of the manufacturing plant near Hyderabad, our sixth plant in India. We will continue to invest in the plant and the community in line with our vision.” Apart from employing local youth the company plans to train local youth collaborating with technical institutes. P&G brands include Vicks, Ariel, Tide, Whisper, Olay, Gillette, AmbiPure among others. Apart from creating significant local employment opportunities, P&G aims at community development in the region supporting the education of underprivileged children as part of P&G’s flagship CSR programme - P&G Shiksha.

P&G has adopted the Zonal Parishad High School in Penjerla village in partnership with its NGO partner Round Table India. P&G operates through 3 entities in India of which 2 are listed on NSE & BSE. The listed P&G entities are Procter & Gamble Hygiene and Health Care Limited and Gillette India Limited, whereas the unlisted entity, a 100% subsidiary of the parent company in the US, operates by the name 'Procter & Gamble Home Products Ltd.'

Source: Business Line
Emami Buys Sanitary Napkin Brand

FMCG firm Emami Ltd has acquired sanitary napkin brand 'She Comfort' from Mumbai-based Royal Hygiene Care Pvt Ltd (RHCPL). The company has not disclosed the financial details. However, analysts have pegged the deal at around Rs 40-50 crore. With this Emami has entered the Rs 2,100 crore feminine hygiene category, that is dominated by brands such as Whisper, Stayfree, Carefree and Sofy.

“We are very happy to announce the acquisition of ‘She Comfort’ brand, one of the top five brands in its category in India,” said Harsha V Agarwal, Director, Emami Ltd. The brand offers synergy with the company’s businesses of personal and healthcare products The acquisition is a part of an aggressive strategy to strengthen our presence significantly in the personal & healthcare segment, he added.

With an aim to build on its core strength and expand further in the wellness space, Emami is focused to seize opportunities with its acquisition of 'She Comfort'. "Awareness of feminine hygiene is still not at an optimal stage in India. The sanitary napkin market is currently a low penetrated category. However, with growing literacy and awareness of healthy lifestyle, more and more new consumers are entering this segment, fuelling the growth tremendously and presenting us with an opportunity that we wish to leverage by offering best of quality products at affordable prices. We plan to use our well entrenched distribution network to reach out to our consumers in both rural and urban markets," Agarwal added.

Source: Business Line

Headlines - SCA

SCA has invested about SEK 150m in local production of hygiene products in southwest India. Production at SCA's own plant is planned to commence in 2015.

"This investment creates a solid platform for us to leverage the favorable growth opportunities that exist in the hygiene products area in India. The investment is in line with our strategy of strengthening SCA’s presence in emerging markets,” says Jan Johansson, President and CEO of SCA and continues:

“India's large population and the low penetration of hygiene products provide the potential for future growth. The brands that SCA intends to launch in the Indian market include the world-leading brands TENA, for incontinence products, and Tork, for Away-From-Home (AFH) tissue. The Libero brand for baby diapers and baby care products and Tempo for consumer tissue will also be introduced.

Source: SCA

Headlines - Hindustan Times

After taking on Hindustan Unilever in the low-cost detergent space with its Ghari detergent, Kanpur-based Rohit Surfactants (RSPL) is gearing up to challenge the likes of Procter & Gamble and Johnson & Johnson as it prepares to enter the sanitary napkin market in India. Sources inform the firm will leverage on rising organised retail and take the low-cost route to fill the market gap. Most large brands such as 'Whisper' from P&G and 'Stayfree' from J&J have a strong presence in urban areas, leaving the field open for the entry of new players with low-cost solutions targeting semi-urban and rural areas.

In the recent past, Japan's Unicharm and some other domestic players have used precisely this strategy to penetrate the market with new offerings. RSPL's Ghari detergent created a flutter earlier this year when data showed it had captured a market share of 17% in the Rs. 13,000 crore-laundry industry. At present RSPL, whose flagship business is detergent, is eyeing a larger FMCG portfolio.

Source: Hindustan Times
Global Nonwovens Limited have set up a state of the art Reicofil 4S multibeam line from Germany to manufacture and supply top quality SS & SMS fabric to the hygiene and medical segment. The equipment has the flexibility in providing different types of fabrics catering to the hygiene segment. Manufacturing site is strategically located in Nasik, Maharashtra incorporating highest standards of Hygiene, excellent warehousing facility and easy logistical access to national highway and sea ports to supply quality nonwovens for domestic and international markets. The plant is built keeping in mind the stringent quality standards required by reputed customers globally and has an installed capacity of 18000 tonnes annually. The plant is due to start up in the first quarter of 2015.

Parasrampuria Engineers, the pioneers in India in manufacturing aperture films and versatile polymer based hygiene films are doubling capacities in not more than two years from 2013. By first quarter of 2015 their new facility which is only 2 kilometers away from the current location near Mumbai would be producing state of the art products namely PE films as in top sheet, back sheet and wrapping materials for the disposable hygiene product industry. Looking at the market demand in India & new trends of reducing cost, their new facility will address down gauging to 14 GSM for back sheet & wrapping materials to address customer's requirements as one of the major breakthroughs. They diversified into hygiene films in early 2004 and ever since have been supplying raw materials locally produced in India to cater to the production of sanitary napkins and diapers. By 2017 they are looking at being one of the 3 major producers in hygiene film business in south east ASIA by addition of technology and capacity.

Looking at penetration and growth prospects and detailed data on consumption trends in the hygiene category in India, analyzing consumption volumes and values at segment level and profiles of companies active in the Personal hygiene sector the growth looks unstoppable. So, as such being the trend setters for localization we have to plan our growth accordingly.

“Health & Hygiene” are going to be major growth sectors in rapidly growing Indian Economy. With this thing in mind Mr. Rahul Page started Walmark Meditech Pvt. Ltd. in 2012. Walmark Meditech Pvt. Ltd. (WMPL) started manufacturing of Adult Diapers in November 2012 by brand name 'Wetex'. Overcoming challenges like procuring raw materials to marketing, 'Wetex' has emerged as one of the leading brand in adult diapers in India. “One company – One product” does not bring feasibility to any project, taking into consideration transportation, sales & marketing expenditures and working capital requirements, because of this WMPL started manufacturing of baby diapers & wet wipes in June 2014. With state of art, manufacturer facility of international standards WMPL has a capacity of manufacturing 45 million pieces/annum adult diapers & 150 million/annum of baby diapers.

"Hygiene for all........ at affordable price” is the main motto of the company.

Walmark Meditech Pvt. Ltd. plans to expand in terms of capacities & products to make 'Wetex' a brand to reckon with globally.
Invest, Make & Develop In India

‘Trust is essential for investors to feel secure. Let us begin with trust; if there is an issue, Government can intervene. Trust too can be a transformative force.’

- Shri Narendra Modi
Honourable Prime Minister of India

Make In India

The Prime Minister, Shri Narendra Modi, launched the ‘Make in India’ initiative with an aim to give the Indian economy a global recognition. Addressing a gathering consisting of top global CEOs during the event at Vigyan Bhawan, New Delhi, on 25th September, 2014, the Prime Minister said “FDI” should be understood as “First Develop India” along with “Foreign Direct Investment.” He urged investors not to look at India merely as a market, but instead see it as an opportunity.

The Prime Minister said it is important for the purchasing power of the common man to increase, as this would further boost demand and hence spur development, in addition to benefiting the investors. He emphasized that the faster people are pulled out of poverty and brought into the middle class, the more opportunity will there be for global business.

The Prime Minister said that India is the only country in the world which offers the unique combination of democracy, demography and demand. He said the new Government was taking initiatives for skill development to ensure that skilled manpower was available for manufacturing. He also referred to the Digital India mission, saying this would ensure that Government processes remained in tune with corporate processes.

The Prime Minister said he had felt a mood of gloom among India’s business community in the last few years, due to lack of clarity on policy issues. The Prime Minister noted that India ranks low on the “ease of doing business” and added that he has sensitized Government officials in this regard. He also emphasized the need for “effective” governance. The Prime Minister also spoke of infrastructure of the future - including i-ways besides highways – and mentioned port led development, optical fibre networks, gas grids and water grids. To the expression “Look East,” the Prime Minister added “Link West”, and said a global vision was essential. He said “Mission Swachh Bharat” and “waste to wealth” could lead to good revenue models for business as well. He referred to his vision of waste water management and solid waste management in 500 towns across India through public private partnership.

The Prime Minister also unveiled the Make in India logo, and launched the website - makeinindia.com

India Formally Signs Trade in Services & Trade in Investments Agreement With ASEAN

India has formally signed the Trade in Services & Trade in Investments Agreement with ASEAN. The Services Agreement will open up opportunities of movement of both manpower and investments from either side between India and ASEAN (Association Of Southeast Asian Nations - Indonesia, Malaysia, Philippines, Singapore, Thailand, Brunei Darussalam, Cambodia, Lao PDR, Myanmar and Vietnam).

Nine out of ten ASEAN countries have signed the same. Philippines is completing its domestic procedure and they are expected to sign soon. It may be mentioned that India-ASEAN Agreement on trade in goods was signed in 2009 and became effective from 2010.

The trade agreement has boosted the total trade between India and ASEAN substantially in the past four years. It may be noted that this Agreement on Services & Investment was scheduled to be signed in Nay Pyi Taw, Myanmar, during the ASEAN Economic Ministers (AEM) meeting on 26th August, 2014.

However, in view of the launch of Prime Minister's Jandhan Yogana for inclusive banking, the Minister of State (Independent Charge) Commerce and Industry Smt. Nirmala Sitharaman (who was in-charge of the launch of the scheme) could not attend the AEM. She, however, deputed the senior officers from the Ministry of Commerce who attended all the important meetings and consultations on her behalf.

The Minister reiterated the deep historical, cultural and economic ties with ASEAN - India values its economic partnership with ASEAN. The signing of the agreement

contd...
in Services & Investment is reflective of India’s deep commitment to have a strong institutional architecture for economic ties with ASEAN. As part of this economic vision, India is also a part of the RCEP negotiations which are presently being discussed between ASEAN and its six partner countries.

Initiatives of the New Government in the Textiles Sector

The new government, under the leadership of Prime Minister Shri Narendra Modi has stressed an economic vision based on increasing production, export and generating employment giving particular attention to:

- Inclusive and participative growth
- Skill, scale and speed
- Make in India brand
- Zero defects - Zero effect (on environment)
- Adarsh Gram
- Generate productive employment opportunity for the youth

India’s textiles and clothing industry is one of the mainstays of the national economy. It is also one of the largest contributing sectors of India’s exports contributing nearly 13.25% of the country’s total export basket. The textiles industry is labour intensive and is one of the largest employers. Textile industry has realized export earnings worth of 41.57 billion USD in 2013-14.

The Textile industry has two broad segments, namely handloom, handicrafts, sericulture, powerlooms in the unorganized sector & spinning, apparel, garmenting, made ups in the organised sector. The new government has taken many initiatives for the development of the textiles sector. Besides the development of handlooms and handicrafts, some of the other initiatives are as follows.

Setting Up Integrated Textile Parks

The Scheme of Integrated Textile Parks is one of the flagship schemes of the Ministry of Textiles. It aims to assist small and medium entrepreneurs in the textile industry to clusterize investments in textile parks by providing financial support for world class infrastructure in the parks. The implementation of the scheme was held up during the last one year due to administrative bottlenecks and no sanction was given for new parks.

The new government moved swiftly to resolve the issues and 13 new textiles parks were approved by the Project Approval Committee (PAC) chaired by the Minister of State for Textiles (Independent Charge) Shri Santosh Kumar Gangwar. While these 13 textile parks will receive a grant to the extent of Rs. 520 crores from government for infrastructure development, they are estimated to bring in private sector investment of about Rs. 3240 crores in the sector and generate direct employment for about 35,000 persons over the next three years.

Besides, a fresh advertisement would be issued calling for proposals for more ITPs for utilization of the balance provision during the 12th plan period.

Exports

During Apr - Aug 2014, the textile exports registered a growth of 9.5% against the corresponding period of last year, while RMG exports grew 17.7% and carpets 22.2%. With a vision to create an export friendly economy the government introduced several initiatives:

- Duty free entitlement to garment exporters for import of trimmings, embellishments and other specified items increased from 3% to 5%
- The government has also proposed to extend 24/7 custom clearance facility at 13 airports and 14 sea ports resulting in faster clearance of import and export cargo
- The proposal for imposing duty on branded items was dropped providing relief to the entire value chain

Indian Textile Facing Competition from Foreign Textile Industry

Textile industry is still facing competition from foreign textile industry including the neighbouring countries especially from Bangladesh, Pakistan and Sri Lanka as these countries are taking advantage of unilateral tariff preference scheme granted to developing countries.

India, which was also a beneficiary of the EU GSP has been graduated out of the GSP from 01.01.2014 for textiles and some other products. The graduation out of countries is done by the EU based on the criterion of trade share. Hence Indian exporters of textiles pay the normal custom duty of upto 8% on textile products being sent to EU from 01.01.2014 onwards. Sri Lanka is covered under a preference scheme of the EU namely GSP. Bangladesh and Pakistan are covered under other unilateral preference scheme of the EU namely the “Everything but Arms (EBA)” and the “GSP Plus” respectively. Hence, they have zero duty access for textile products into the EU.

China’s manufacturing base in textiles is larger than India both in terms of yarn and fabric providing opportunities for higher garment manufacturing and exports. China has large and strong infrastructure to meet global demand of textiles and clothing.

The Government has undertaken research and studies on various facts of textile industry including estimating the domestic household market size of textiles & export competitiveness analysis of the Indian textiles in different export destinations of the world.

The information was given by Shri Santosh Kumar Gangwar, the Minister of State (Independent Charge) in the Ministry of Textiles.
In context to the great plans chalked out by the newly formed government of India for the development of the Indian infrastructure, there would be arising a huge need for geosynthetics to bring forth a world class infrastructure. Against this backdrop, BCH brings to you an interview of Mr. Narendra Dalmia, the Director & CEO of Strata Geosystems (India) in order to bring forth the geosynthetic industry’s views on the infrastructure development in India. With a vision to provide sustainable, eco-friendly and cost effective geotechnical solutions for the infrastructure industry, Mr. Dalmia can be credited to be a highly professional and an experienced voice representing the Geosynthetic Industry of India.

About Strata Geosystems (India) Pvt. Ltd. - Strata India is a leading end-to-end geotechnical solution provider for reinforced soil walls, slope protection and stabilization, erosion control, foundation improvement for structures and embankments, steep slope embankments, strengthening of paved and unpaved roads, storage yards and industrial flooring. Strata India was established in 2004 and is a joint venture with Strata Systems Inc., USA (part of the 130-year old Glen Raven group of companies).

BCH: As the Indian Prime Minister Mr. Narendra Modi stresses upon the need for a world class infrastructure, some of the recent headlines that have hit the Indian media are:

- NDA, which is credited for fast development of infrastructure during the six years of its rule between 1998-2004, is now back in power and has started exploring ways to widen the network of cheaper but durable roadwork across the country

- The Port Connectivity Highway Project and the industrial infrastructure development comprising of special economic zones are seeing clearances now. These zones will develop the Free Trade Warehousing Zone, Engineering Goods Sector, Electronics and Hardware Sectors, Non- Conventional Energy Sector, Multi Services (IT and Healthcare) Sectors and Apparel and Textiles Sectors

- Railways has been granted clearance for 100 percent Foreign Direct Investment

- A vision that comprises of the next generation infrastructure would have bullet trains as in Japan, smart cities , IITs, IIMs and AIIMS in every State and much more

How much of this news that is heard seems to be real and how do you see the change happening? Please give your views.

ND: Change management is a very difficult activity and for a country of the size of India, this is exacerbated exponentially. The new government is following a sequential process of first outlining a vision for the country, both short term and long term, and then would have to put the systems in place to achieve this vision. The infrastructure sector has been suffering for the last couple of years and a systematic change is required at all levels, to bring it back on track, which cannot be achieved in a few months. Key reforms are required in several areas such as environmental policies, land related policies, labour reforms, finance and contracting terms, conflict resolution mechanism, etc. I feel it will take another 6 months to a year before we see the impact of decisions taken at the highest level become a reality at the ground level. In the short term, the focus can be on projects which are stuck at a regulatory level and which have potential to revive the whole chain.

BCH: Do you think that the present commoditized Geosynthetics industry of India will see qualitative change in its products and services? Please justify.

ND: A qualitative change is driven majorly by 2 forces – supply / demand curve and regulatory conditions. With the multi-fold increase in supply in the last few years and reduction in demand, cost has become the major decision factor and sub-standard products backed by insufficient testing have found way in the industry. Furthermore, considering the fact that geosynthetics is not a very old sector in India, the regulatory mechanism is not in place in totality. This is changing now with new regulations currently underway and with hopes of improvement in demand, quality will come to be a major decision point.

BCH: As a leading manufacturer of geosynthetics, do you think that India offers a conducive atmosphere for manufacturing? What are the short comings according to you?

ND: India is a good place for manufacturing geosynthetics owing to its leadership in textile manufacturing, availability of a skilled workforce, and a presence of the entire supply chain in the manufacturing process. Where we are lacking is scale of economies, fast creation of domestic demand, technology acceptance, conducive tax structures and export support to technical textiles.
BCH: How is India comparable in terms of geosynthetic usage to the world? Where does it lack and what may be its strengths?
ND: India is quite slow in adopting geosynthetics in regular operations although there have been success stories in a few products/applications where geosynthetics have found nation-wide acceptance. The highway sector is a prime example where due to the BOT model, geosynthetics offering a clear value proposition have been accepted. There must be an environment more conducive for new products and a willingness to try new solutions. From the suppliers end, the right solutions have to be designed for different challenges.

BCH: As most of the contracts are with the government for infrastructure development, many a times there are multiple product offerings for addressing a need. Who decides what should be used? As to you what should be the methodology adopted for fair & need based selection?
ND: The decision on technology adoption typically rests in the hands of the government officials in charge of the project or the consulting engineer who is responsible for the project management. In DBFOT projects, the concessionaire is also accorded responsibility for selecting the technology. There are several cases where multiple technologies are applicable. The first decision point should be on a technical ground and then on a commercial ground. If still multiple technologies can be applied then other decision factors such as ease of installation, environmental benefits, saving in natural resources, availability of materials etc. should be considered. Typically by reviewing international cases or executing a small trial with a defined evaluation period and test methodology can help in choosing a technology.

BCH: Which products according to you is the immediate need for the infrastructure development envisaged? There may be many products which are still not used in India.
ND: A major bottleneck in infrastructure development is availability of natural resources like sand, gravel etc. Any products which help reduces our dependency on traditional construction materials would be vastly beneficial in the long run. Products to reduce the thickness of our road crust such as Geocells, reduce the thickness of drainage layers such as Geonets, or provide better barrier systems in place of clay such as GCLs will be very helpful.

BCH: There is a great need to protect the Himalayas and the Indian coastline from soil erosion? Please comment.
ND: Sadly, the effects of soil erosion, rampant deforestation, and poor construction planning are in front of us with the devastation in Uttarakhand and recently in J&K. The natural barriers to such activities are slowly being depleted. Coastal protection is vital to prevent loss of land and reduce the intensity of natural phenomena such as hurricanes, tsunamis etc. Geosynthetics are perfect products to provide alternate protection systems for such challenges.

BCH: In the geogrids industry alone, do you see the usage happening in the road sector apart from RE walls? How do you see the high value grids made of aramids and carbon fibre gaining ground in India?
ND: High value grids will take time to enter the Indian market mainly due to its critical applications and low international usage. High strength grids, which are used extensively for ground improvement internationally, are finding it difficult to gain acceptance since the concept is new in India and requires a critical design process.

BCH: Strata India has recently introduced Geocells in the market? Please enlighten us on the cost benefit analysis to the contractor after using these Geocells?
ND: Geocells have 2 major applications – reduce soil erosion and for load support for ground improvement. In both cases, the value proposition is different.

In soil erosion protection, Geocells offer an alternate to using stone pitching. Stones are increasingly getting difficult to procure and create severe environmental harm. With Geocells, vegetation can be grown effectively while reducing soil erosion. Local vegetative soil can be used as an infill that reduces the dependency on transportation of stones from long distances. Overall, not only do Geocells offer a commercial benefit but also provide a more aesthetic green face with better environmental benefits. In ground improvement, Geocells can be used effectively on weak soils and prevent the need to use a thick soil fill to spread the loads. The traditional solution in such cases is to use a thick road crust comprising of good quality soil that reduces the loads reaching the weak ground. Geocells accomplishes the same point, but by utilizing less soil. This reduces overall costs, transportation of soil, pollution related to quarrying/ mining and transportation etc. In the long run, as our natural resources become scarcer, Geocells will only gain further in their commercial benefits.

BCH: What are your views on the usage of landfills? What improvements can be made in infrastructure to leave behind a minimal carbon footprint?
ND: Landfills are the most economical method to dispose of trash currently. If scientifically built using the right geosynthetics, the carbon footprint can be reduced by a large extent. Other methods such as composting, WTE, etc. to dispose of trash are better from an environmental point but commercially they are more expensive. Strict regulations are required to reduce the carbon footprint. Of course the best method is to reduce, reuse and recycle.

BCH: What is the future of the geosynthetics in India? What advice would you like to give to the stakeholders of the geosynthetic industry?
ND: Geosynthetics offer great alternatives to traditional construction methods. Care should be taken in design and usage since they are very technical in nature. If proper methods are adopted and good quality products with the required testing are chosen, geosynthetics can provide great overall benefits.
True Cotton Nonwoven Fibres
A ‘Sustainability’ Success Story

Lawson Gary, TJ Beall Company; Keith Osteen & Rob Johnson, Smith, Johnson & Associates

In 1936 Charles Merrill of Merrill-Lynch fame sold his Mississippi Delta cotton farm to his general manager who was affectionately known to family and friends as “Daddy Hugh”. Hugh Lawson Gary, having five years earlier lost his own nearby farm to the Great Depression, bought this farm on credit. Seventy five years later, Hugh’s great grandson, Lawson Gary is not only farming the same land on Wildwood Farms, but is innovating new cotton processes that show great promise in changing the usage of cotton in nonwovens. Wildwood Farms is located on a large bend of the Tallahatchie River near Greenwood, Mississippi. The 5,000 acre farm is sustainably managed with 20% of the land returned to its natural habitat.

The Gary family today can look back at seven generations of cotton farming with a view and perspective of tremendous change not only in cotton customers and markets but also technology and farming “best practices”. Today, five full time employees and tractors do the work that 100 resident farm families and 300 mules performed when Hugh Gary originally bought the farm. But there is more change in cotton farming technology than just the use of horsepower to replace manpower.

The cotton farming industry has a rich heritage around the world as cotton has been cultivated and converted into clothing for approximately 10,000 years. Cotton fibre is used extensively in textiles because of its physical and dyeing properties, softness, wicking, and skin-contact comfort. Additionally, in nonwovens, cotton fibre has been primarily valued for its absorbency, natural hypoallergenic properties and consumer acceptance as a natural fibre. Despite this importance, longevity and broad based usage, the cotton industry has been subject to several myths and misperceptions regarding the environmental impact and overall sustainability position of cotton farming in areas such as irrigation, pesticide use, runoff, erosion and habitat impact.

Sustainability can be defined as the balance between growing profitability, protecting the environment and promoting social responsibility. Modern technologies and practices for cotton farming in the US have changed tremendously over the last thirty years. Modern sustainable cotton growing practices are a central part of cotton farming in the United States.

For instance, Wildwood Farms participates in annual sustainability assessments conducted by Delta F.A.R.M. or Farmers Advocating Resource Management. This organization benchmarks sustainable practices on over one million acres of cropland in the Mississippi Delta and more importantly, works with farmers to increase the implementation of best management practices in their fields. New techniques are now employed such as surface water irrigation recovery systems, nutrient reduction practices including soil nutrient mapping and variable rate crop input applications, integrated pest management and natural habitat protection and restoration initiatives.

A benchmark study published in December 2012 by Keystone Alliance for Sustainable Agriculture (see Table 1 below) illustrates the level of sustainable farming progress made over the preceding thirty-year period.

Wildwood Farms and the Gary family are well acquainted with the concept and practice of sustainability with a long history of involvement in cotton fibre recycling. In the 1980’s, Lawson Gary’s father, Tommy designed a system to utilize waste cotton from cotton gins and repurpose or recycle these fibres for use in traditional textiles, bleached cotton goods, and paper currency. Over the years, this process was modified and refined in a manner which resulted in qualities increasingly suitable for various uses. In particular, during the last 30 years the Garys developed a unique and in-depth knowledge of cotton cleaning technology resulting in them becoming one of the premier specialty cotton fibre providers in the world.

Seven years ago this cumulative knowledge was put to work on a new concept in cooperation with a long time processing customer TJ Beall Company. They designed a new plant utilizing their proven cotton cleaning processes as well as custom designed textiles equipment. The result was a raw cotton fibre cleaner than anyone had ever seen!
The proprietary mechanical cleaning process for the new fibre uses no water, chemicals or processing heat since the fibres are not scoured, bleached or dried. Limiting the processing of this cotton fibre to mechanical cleaning significantly lowers the fibre production energy requirements. The cleaning process employs a combination of air and mechanical systems to remove foreign matter from cotton fibres and further includes an optional sterilization stage. The cleaning process yields a 99.99% trash-free fibre with excellent nonwoven carding properties at high production rates with very low nep formation and dusting. Nonwoven webs produced from the fibres are very uniform in appearance and have an excellent handfeel. Web softness is enhanced because the natural waxes and oils are retained on the fibre coating which reduces the coefficient of friction. This same natural coating is also responsible for a level of lubrication which leads to excellent downstream fibre processing.

The reduction in fibre processing unit operations vastly improves the sustainability profile and favorable environmental footprint of the new cotton fibre. But equally exciting is the price point on this reduced processing expense fibre which is competitive with hygiene-grade polypropylene.

In 2012, a portion of the Wildwood Farm’s business, Wildwood Gin, merged with TJ Beall Company to further align their joint resources and focus on new opportunities. TJ Beall Company’s owner Julian Beall, III and his family have been in the textile waste and cotton gin waste business since the 1930’s and have worked closely with the Garys in product development for many years.

The “new” TJ Beall Company’s mechanically cleaned cotton fibre product is branded “True Cotton®” and is a clear breakthrough in sustainability and innovation. It is the most natural fibre available to the nonwoven industry and is much “closer to the plant” than any commercially produced fibre used in nonwoven production. True Cotton® is soft, natural, biodegradable, annually renewable and consumer preferred. The ISO: 9000 certified production plant is located on the Garys’ farm near Greenwood, MS.

Nonwovens, while a relatively small market for cotton fibres compared to traditional textiles, is a growing market with increasing interest in better performing, environmentally friendly and sustainable raw materials and products. The uniqueness of True Cotton® for nonwoven applications does not stop at improved softness, easier carding and greater sustainability. The untreated cotton fibres are less wettable than bleached and scoured fibres and shed water and certain other liquids (see Table 2 below). Both properties are due to the waxes and pectin retained in this unscoured and unbleached fibre.

TJ Beall has worked within the nonwovens industry to evaluate potential new uses for this unique sustainable fibre initially focusing on disposable hygiene and medical product markets. TJ Beall has received considerable interest in their new sustainable fibre along with new questions about any downside risks with a relatively untreated, more natural cotton fibre. The company has done their fibre analysis and production process homework in providing a clean, bacteria, fungus and pesticide-free cotton fibre completely suitable for the targeted applications. The new fibre has withstood the rigor of testing by the USDA and certifications by the strictest and most coveted textile and environmental testing standards such as Oeko-Tex Standard 100. Market research conducted by Cotton Incorporated in December, 2013 shows that consumers favor the off-white, more natural color of unbleached cotton in the context of more environmentally friendly products and product components.

Product application testing results in hygiene and medical disposables to be more promising. Spunlace True Cotton® diaper liners and acquisition layers wick but do not absorb or retain synthetic urine in a manner supporting excellent fluid uptake with low rewet. Sample materials for this test were treated to make them more wettable and evaluated using standard industry EDANA/INDA methods (see Table 3 below). The same fibres have been found to facilitate faster blood clotting and hydrogen peroxide release-based wound healing in medical dressings based on USDA SRRC testing.
The first commercialization of True Cotton®, however, is on the cloth-like backsheet of seventh generation touch of cloth® diapers through target stores in the United States in August, 2014. Touch of cloth® diapers are the first disposable diapers to feature a remarkably soft backsheet with pure unbleached cotton. The improved diaper utilizes a biobased spunlace nonwoven backsheet produced from True Cotton®.

Innovation involves finding higher value solutions and enabling technologies that meet or exceed new product requirements and satisfy unmet or existing market needs. Innovations can have business impact by more functional products, better processes, services, technologies or ideas that are readily available to markets, governments and society at large. Sustainability initiatives additionally seek to strike the balance between growing profitability, protecting the environment and promoting social responsibility. True Cotton® is a new and unexpected sustainable technology innovation in the nonwoven industry.

“Daddy Hugh’s” legacy businesses today in growing cotton, mote processing and the new True Cotton® fibre enterprise under the TJ Beall Company umbrella are evolving with many new modern techniques, best practices and farming methods while remaining grounded in the roots of Mississippi delta cotton farming. The new True Cotton® fibre offers the nonwovens industry new possibilities for a more natural product development and sustainability. True Cotton® can be made with organic cotton and TJ Beall is certified to manufacture and handle organic products through the Global Organic Textile Standard (GOTS). An industrial use version of True Cotton® is also available for applications not requiring sterilization. A second fibre type, Natural Plus, is whiter, absorbent and antibacterial for applications requiring these properties. Daddy Hugh’s great grandson Lawson Gary is Chief Operating Officer for TJ Beall’s True Cotton® Sales and Marketing and oversees the production of True Cotton®.

References
5 “In vitro hemostatic, hydrogen peroxide production and elastase sequestration properties of nonwoven ultra clean greige cotton dressing” Southern Research Center, Agricultural Research Service, USDA, New Orleans, LA 70124. afsweb.usda.gov/research/publications/publications.htm?seq_no_115=2915358pdf=1
Pure and Natural Cotton Nonwovens

BELCOT  100% Absorbent Cotton Spunlace
ORGANICOT  100% Organic Cotton Spunlace
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100% Biodegradable
Environmentally Friendly
Excellent Absorbency
High Wet Strength
Soft and Bulky
Air Permeability

Applications:
Replacement Gauze / Swabs
Top Sheets in Femcare
and Incontinence Products
Dry / Wet Wipes
Cosmetic Pads

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Think About it..

Your T-shirt tracking your biometrics, your briefcase sending you notifications while you are away, your compression wrap healing your injuries without any mess, soldiers wearing a uniform made of self-cleaning fabric, your garment guarding you against overheating and chilling in extreme climates...

Introducing You to a New and Exciting Range of Technical Textile Products Launched Recently..

Ralph Lauren Introduces the Next Evolution of Wearable Technology

Ralph Lauren Corp. unveiled the high-performance, fashion-forward Polo Tech shirt on opening day of the US Open. The Polo Tech shirt is an innovative new product from a fashion brand that merges biometrics into active lifestyle apparel, marking a revolution in advanced technology designed to improve general wellness and increase personal fitness.

The Ralph Lauren Polo Tech shirt features sensors knitted into the core of the product to read biological and physiological information. With Ralph Lauren’s leadership in the design community, the compression shirt also has a sleek look in black with a signature yellow Polo Player logo. The second-skin fit enhances comfort and agility.

The Ralph Lauren Polo Tech shirt was developed with proprietary technology from Canadian-based OMsignal, whose team include experts in neuroscience, sports medicine and engineering. With OMsignal, the shirt itself is the sensor. The OM platform delivers a wide variety of physiological data through seamless apparel directly to the users via an app on their smart phone.

An Interactive Smart Bag - A Change in the Traditional Briefcase

Professionals today are increasingly mobile and their bag holds their most important devices and items. A smart bag, recently introduced by Phorce Pro not only powers devices on the go but also transforms shape and wirelessly communicates with smartphones via Bluetooth thus enabling one to work from anywhere.

The Phorce Pro bag can power up to three devices simultaneously and is also a three in one bag as it can transform from a briefcase into a messenger bag or a backpack in seconds. The Phorce Pro bag charges laptops, smartphones, tablets, and other devices with its 3 high-speed USB power ports and a 90 W laptop charging port through its sensor-based platform which is situated at its core. Apart from this, the bag can send notifications through motion detection and is made of water resistant fabric & zippers along with a protective padding to keep the gear safe.
Meet ‘Dr. Cool’- The Hottest Thing in Cool Technology

Dr. Cool is a product to combine ice and compression in one flexible wrap. Dr. Cool wraps can be used dry as a compression wrap to support and protect various body parts during activities, or frozen to combine cold and compression to reduce swelling and speed recovery mid or post-activity. To use Dr. Cool wraps as a cold compress, simply wet the wrap then roll and freeze it; Coolcore’s patented material will keep the fabric colder and longer. The wrap is like a bag of ice woven into a bandage—minus the mess and the traditional crusty beige bandage material. The Coolcore fabric keeps the wrap cooler, longer and works without nasty chemicals, so the cooling benefits last the life of the product. It all equals life-friendly recovery for people who don’t have time to sit around and listen to their injuries nag.

The Omniphobic - Self Cleaning Coated Fabrics

Quoc Truong, a physical scientist at the Natick Soldier Research, Development and Engineering Center, or NSRDEC provided technical guidance and direction to NSRDEC’s industry partner, Luna Innovations, Inc., to successfully develop a durable, “omniphobic” coating used to produce self-cleaning fabrics. The technology, which was developed for use in ‘Soldier Clothing’, has now made its way to the commercial market. The coating greatly reduces how often soldiers need to clean their clothes and enhances chem-bio protection. The omniphobic-coated fabric significantly lowers dirt and dust attraction and repels water, oil and many liquid chemicals. “The treated fabric also has an anti-microbial additive. It slows microbe growth that causes odor,” said Truong. The omniphobic coating’s predecessor, Quarpel, is a durable, water-repellent coating that has been used for the past 40 years. Compared with Quarpel, the new coating is more repellent to oil and toxic chemicals. It is also "greener" than its predecessor.

The Most Technical First Layer in Sport - Nike Hyperwarm Flex

The right baselayer, while largely unseen, is critical to an athlete’s performance while training and competing. Mental acuity, muscle reactivity, flexibility, speed and agility are all negatively impacted if the athlete isn’t dry, warm and properly protected. Nike Hyperwarm Flex is claimed to be the warmest and most flexible Nike baselayer for athlete’s performance while training and competing in cold climates. Both the Hyperwarm Flex and top feature breathable mesh and seamless knit engineering to achieve a purposeful combination of aesthetics and performance. Nike Hyperwarm Flex is a top and pant combination that uses the latest advancements in seamless knitting manufacturing technologies and advances in materials science to deliver base layer protection unlike any other. Distinct knitted panels in areas requiring flexibility - the shoulders, elbows and knees - provide superior articulation and unrestricted freedom of movement. Thermal mapping identified zones where warmth is critical, requiring a different knit density for optimal warmth. To guard against overheating or the chilling effect of sweat left unmanaged, special Dri-Fit Max fabric is positioned at key areas on the inside of the Hyperwarm Flex top and pant to wick moisture away and ensure athletes stay comfortable. All Nike baselayers and the new Hyperwarm Flex are available on nike.com.
International Conference on
TECHNICAL TEXTILES & NONWOVENS
6-8, November 2014

www.textileconferenceiitd.com
ictn2014.iitd@gmail.com

Venue: IIT Delhi

Conference Highlights

- Link between Industry & Academia
- Technical Presentations
- Focused Workshops by International Experts
- Exhibition on Technical Textiles & Nonwovens
- Sponsorship Opportunities

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Forthcoming Events

October - December 2014

**Insight 2014**
19 - 23 October; Indiana, USA; www.india.org

**China & Asia Disposable Hygiene Products Forum 2014**
28 - 29 October; Guangzhou, China; www.wis-consulting.com.cn

**TCL 2014**
04 - 05 November; Cannes, France; www.technical-textiles.net

**ICTN 2014**
06 - 08 November; New Delhi, India; www.textileconferenceindia.com

**India Sports Expo 2014**
06 - 08 November; New Delhi, India; www.indiasports.org

**JEC Asia 2014**
17 - 19 November; Singapore; www.jecomposites.com

**Outlook Asia 2014**
26 - 27 November; Singapore; www.edana.org

**India Composites Show 2014**
10 - 12 December; Mumbai, India; www.indiacompositemsshow.com

January - March 2015

**Heimtextil 2015**
14 - 17 January; Frankfurt am Main, Germany; www.heimtextil-messefrankfurt.com

**ISPO Munich 2015**
05 - 08 February; Messe München, Munich; www.munich.ispo.com

**Geosynthetics 2015**
15 - 18 February; Portland, USA; www.geosyntheticsconference.com

**Middle East & North Africa Nonwovens Symposium 2015**
17 - 18 February; Dubai, United Arab Emirates; www.edana.org

**Filtex 2015**
24 - 26 February; Cologne, Germany; www.filtex.de

**OUTLOOK® Plus Latin America 2015**
03 - 05 March; Sao Paulo, Brazil; www.edana.org

**Eco-Build**
03 - 05 March; London, USA; www.ecobuild.co.uk

**Nonwovens for High Performance Applications**
04 - 05 March; Cannes, France; www.intnews.com/NHPA

**JEC Europe 2015**
10 - 12 March; Paris, France; www.jecomposites.com

**Filfutex Asia 2015**
17 - 18 March; Hongkong, China; www.edana.org

April - June 2015

**Aircraft Interiors Expo**
14 - 16 April; Hamburg Messe, Germany; www.aircraftinteriordexpo.com

**18th International Techtextil**
04 - 07 May; Frankfurt, Germany; www.techtextil.messefrankfurt.com

**Smart Fabrics & Wearable Technology 2015**
11 - 13 May; San Francisco, USA; www.smartfabricsconference.com

**ANEX 2015**
13 - 15 May; Shanghai, China; www.anex2015.com

**Roof India**
22 - 24 May; Mumbai, India; www.roofindia.com

**2nd NonWoven Tech Asia**
04 - 06 June; Gujrat, India; www.nonwoventechasia.com

**Heimtextil India 2015**
25 - 27 June; New Delhi, India; heimtextil-india.in.messefrankfurt.com

July - September 2015

**Outdoor 2015**
15 - 18 July; Friedrichshafen, Germany; www.outdoor-show.com

**20th International Conference on Composite Materials**
19 - 24 July; Copenhagen, Denmark; www.iccm20.org

**OSH India**
22 - 23 August; Chennai, India; www.ubmindia.in

**Hightex 2015**
11 - 13 September; Istanbul, Turkey; www.hightex2015.com

**Techtextil India**
24 - 26 September; Mumbai, India; www.techtextil-india.co.in
Recent Industry Events - At A Glance

2nd National Seminar on Non Woven Technical Textiles
4th July, 2014, New Delhi

The seminar was organized to help the industry and get informed about those topics and support of a world-leading event to both meet industries (and a broader industry focus in the nonwoven personal care and hygiene products industries). The seminar was held in the PHD House.

The topics covered during the seminar were as follows:

- Schemes of Government of India to promote the technical textiles
- Use of geosynthetics in infrastructure development
- Agrotechnology and how it can increase productivity
- Various advancements and innovations in technical textiles
- Machinery or technology for the nonwoven technical textiles
- Protective textiles

OUTLOOK™ 14
24 - 26 September, 2014, Barcelona, Spain

From raw materials to the customer, personal care and hygiene products deliver tangible benefits. With more than 420 delegates from across the nonwoven and related industries, OUTLOOK™ was again confirmed as the must-attend event of the year for the personal care and hygiene products industries.

The event brought together internationally renowned exhibitors, consultants, business experts & key government officials from both Chennai & Mumbai on one common platform, who discussed global best practices and uneartthed solutions to some of the most pressing challenges in workplace safety & health. Speaking on the occasion, Mr. Jogi George, Managing Director, UBM India said, “OSH India has been successful in creating an environment conducive for interactive discussions between policy makers, safety experts & manufacturers.”

The first edition of OSH India in Chennai as expected, had huge industry participation, validating the industry need to spread the compliance of health & safety as a part of their policy among companies & stakeholders.

Lack of well-planned and implemented OSH programme could lead to substantial costs being incurred for compensatory damages, investigation time, lost productivity, diminished goodwill from the workforce, customers and the community. Numerous industrial accidents in the past have not only served as learning experiences for the industry but have also demonstrated the need to adopt adequate safety measures in workplaces.

OSH Chennai 2014
17-18 July, 2014, Tamil Nadu, India

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Filterex’ 2014
01-02 October, 2014, Berlin, Germany

EDANA closed the 2014 FILTREX™ conference on nonwoven filter media, with thanks & celebration for the 10th anniversary of the conference. With more than 160 delegates at the conference, this 6th edition gave focus to automotive applications, innovation in filter media, indoor air quality, & measuring & testing methods.

Speaking at the opening of the event, Pierre Wiertz, General Manager of EDANA said “Once again, the whole supply chain is meeting for a unique conference focused solely on nonwoven filter media.”

Filter media, are the fastest growing end-use of nonwovens globally & in each continent (over 9% average annual growth both before & after the 2008 financial crisis). According to EDANA estimates, with input from global partner associations INDA & ANFA, worldwide sales of filter media represented more than 400,000 tonnes of nonwovens in 2011, & this is forecast to grow to 700,000 in 2016 with Asia more than doubling & representing almost half of the global estimated figure of 700,000 tonnes in 2016. This would mean that filter media will represent around 8% of total sales of the global nonwovens output in 2016, estimated at 8.5 million tonnes.

AdvaMed 2014
06-08 October, 2014, Illinois, USA

AdvaMed 2014: The MedTech conference closed its eighth annual conference with more than 2,400 attendees, an increase of 13 percent compared to last year. Participants included nearly 900 companies and stakeholder groups from 29 countries, including the United States.

Event highlights included:
- 116 exhibitors displayed their latest products and services in the exhibit hall
- 61 company presentations featured the latest device and diagnostic innovations, more than 40 of which received scholarships to cover associated fees
- 34 educational panels organized into 11 tracks included strategies for success as well as public policy issues
- Six sector meetups on the topics of cardiovascular, patient monitoring, imaging and health IT, surgical devices and instruments, neurology and oncology, in vitro diagnostics and orthopedic and wound management
Austria: Successful Start-up of World’s Largest TENCEL® Production Plant in Lenzing

The Lenzing Group has successfully initiated production at its new TENCEL® jumbo production facility, the largest in the world, at the Lenzing site in Upper Austria. The plant is in the midst of a stable ramp-up phase. The feedback on the part of the market is very positive. Lenzing Group should be able to achieve the planned production target of 30,000 tons by the end of 2014. Previous TENCEL® production lines were usually only one-quarter as large. The new plant design incorporates lessons learned from the longstanding experience of three existing Lenzing Group TENCEL® production plants located in Austria, USA and Great Britain.

As a consequence, the new TENCEL® plant in Lenzing represents the world's leading generation of TENCEL® technology. TENCEL® is the latest generation of man-made cellulose fibres, & is manufactured in a particularly environmentally-compatible production process awarded the "European Award for the Environment" by the European Union. Lenzing is the only industrial-scale supplier of TENCEL® in the world. TENCEL® fibres are used by the textile industry as well as for nonwovens. Typical applications of the high-tech fibre TENCEL® include sportswear, soft denim, cosmetics. However, TENCEL® is also being increasingly deployed for technical applications.

USA: MiniFIBERS Announces the Commercialization of Kynar® PVDF fibres

MiniFIBERS, Inc. announces that Kynar® Polyvinylidyene Fluoride (PVDF) multifilament and precision cut staple fibres are commercially available to address the growing demand for high performance synthetic fibres. Kynar® PVDF has traditionally been used to service tough environments which require excellent chemical resistance, weatherability, and durability; but have recently found a significant interest into new markets which PVDF traditionally did not service. Traditionally, Kynar® PVDF has been used for industrial environments which require total resistance to water, acids, oxidants, halogens, hydrocarbons, ozone, aromatic & aliphatic solvents. In addition, it is known for excellent abrasion resistance, UV resistance, stain & odor resistance, and the ability to withstand gamma ray sterilization techniques which are all growing needs for the textile and nonwoven industries.

USA: Flat PET Microfibre Enables Stronger and Highly Uniform Sheet, Expands Eastman Cyphrex™ Family

New product possibilities are on the horizon for manufacturers of wetlaid nonwovens and specialty papers with the addition of a flat PET fibre to the Cyphrex™ microfibre portfolio. This fibre, with its novel cross section, enables functional benefits such as uniformity, lightweight strength and improved processability compared with other synthetic microfibres. Flat PET Cyphrex fibres are less than 0.4 denier in size. With its distinctive, consistent cross section, the flat PET Eastman Cyphrex™ microfibre greatly improves nonwovens formation and sheet uniformity when compared with other synthetic fibres. These characteristics provide functional benefits in many applications for which dimensional consistency within and across the nonwoven is critical. Compared with other synthetic fibres, Eastman Cyphrex™ flat PET fibres enable impressive tensile, tear and burst strength within a very lightweight nonwoven sheet, as well as outstanding green strength. In some applications, these fibres can improve strength-to-weight ratio and dimensional stability.

Germany: Kelheim Fibres Selected as Finalist in Two Categories of ITMA Future Materials Awards

The world leading viscose speciality fibre manufacturer Kelheim Fibres has reached the final of the ITMA Future Materials Awards in not one, but two categories. With their new speciality fibre Bramante, the Bavarians applied for the award in the category "Best Innovation Medical Textiles". Bramante offers a solution for an increasing challenge of our ageing society: after all, 20% of all people over 60 suffer from urinary incontinence. The hollow viscose fibre Bramante far exceeds the naturally high absorbency of viscose fibres – Bramante is capable of absorbing and retaining an amount of liquid corresponding to around 250% of its own weight! It retains absorbed liquids even when under pressure, enabling the production of incontinence pads that are washable and therefore environmentally sound, yet at the same time absolutely reliable, and don’t restrict the activities of the user. Alongside the innovative fibre, Kelheim Fibres has also identified the optimum construction for the nonwoven fabric used, and so offers the only washable incontinence solution which is currently able to compete with disposable products. By rigorously pursuing the innovation strategy, the Bavarians were able to increase the share of speciality fibres in their portfolio from less than 30% in the middle of the 1990s to more than 60% in 2013.
Switzerland: DuPont Protection Technologies Sale of the DuPont Sontara® Business to Jacob Holm Complete

DuPont Protection Technologies (DuPont) and JACOB HOLM & SØNNER HOLDING A/S (Jacob Holm) announced completion of the sale of the DuPont™ Sontara® business to Jacob Holm. Sontara® is a global nonwovens business that produces products used in a variety of medical and wipes applications.

Marc Doyle, President, DuPont Protection Technologies said, “This transaction represents another step in the execution of our growth strategy in DuPont Protection Technologies and further enhances our focus on delivering innovative advanced materials that drive profitable growth both today and over the long term, we wish those in the Sontara® business every success under Jacob Holm.”

Jacob Holm is a leading company for spunlaced nonwoven fabrics. Founded in 1794, the company has production facilities in France and the United States and is headquartered in Switzerland. DuPont Protection Technologies is a leader in technologies and products that protect people, the environment and critical assets worldwide.

USA: TenCate Supplies Composites to ICON Aircraft A5 Amphibious Sport Aircraft

The first production of the A5 Amphibious Sport Aircraft makes extensive use of advanced composites from TenCate to achieve high strength, lightweight and outstanding performance in a wide range of environmental conditions. ICON Aircraft is a consumer sport plane manufacturer founded in response to the new sport flying category. ICON's first plane is the A5, an amphibious sport aircraft that fuses outstanding aeronautical engineering with world-class product design.

With ESN-1 complete and ESN-2 under construction, we are now looking toward FAA approval, after which we will begin customer deliveries. It has won some of the world’s most prestigious design awards and has inspired a global following. The company has already received market response for more than 1,400 A5 positions.

Germany: AUNDE Group Acquires Fehrer Group

The renowned German automotive supplier Fehrer has reached an agreement with a strategic investor regarding a company takeover. In future, the AUNDE Group with its headquarters in Mönchengladbach will be the company’s sole shareholder. After the successful completion of its operating restructuring Fehrer’s financial reorganization is herewith completed as well. The AUNDE Group, which ranks among the world’s 100 leading system suppliers for the automotive industry, is taking over all of Fehrer’s locations, including all of its approx. 4,000 employees across the globe.

As a technology leader in the manufacture of seat cushions, seat modules and interior components, Fehrer is a perfect addition to our portfolio”, said Rolf Königs, Chairman and CEO of the AUNDE Group. The AUNDE Group, which comprises the AUNDE and ISRINGHAUSEN brands, ranks among the global market leaders for automotive textiles, fabric and leather seat covers. etc. The takeover allows the enlarged group to further expand its leading position on the market. For Fehrer completely new development opportunities arise within our global group. The takeover will allow Fehrer to completely restructure its finances on the equity and liabilities side and replenish its equity.

UK: AGC Aerocomposites and ATK Sign Teaming Agreement

AGC AeroComposites and ATK announced a teaming agreement creating an aerospace & defense industry resource spanning the full scope and scale of aerospace composites structures. Under terms of the agreement, the companies will team to pursue content on both commercial and military platforms with an emphasis on tape lay and hand lay-up solutions.

The combined core capabilities of each company will provide mutual turnkey composite design, manufacturing capabilities and solutions. The scope of the global team capabilities encompass: both structural and nonstructural advanced composite products, specialized equipment, tooling, and manufacturing processes spanning fibre-placement, automated tape lay-up, large resin transfer molding and finishing and specifically hand lay-up. Both ATK and AGC AeroComposites are well-known in the industry as providers of highly engineered and reliable composite structures.
Spain: PGI Announces Increase in State-of-the-art Capacity to Serve the Personal Care Markets

PGI announced to increase its European capacity for personal care specialty materials and exceed 100 KMT in the region, offering the widest portfolio of spunmelt & carded technologies from four world class manufacturing facilities in the North & South of Europe (France, Holland, Italy & Spain). PGI will increase significantly its spunmelt nonwovens SMS capacity at its site in Tarragona, Spain by 2015 & will invest in specialty carded capacity at its Terno, Italy facilities.

PGI is constantly evolving its technologies to help our customers grow,” comments Jean-Marc Galvez, PGI President, Europe. “This capacity increases PGI’s position to assist customers with growing demand for specialty materials in Hygiene & Healthcare applications.” PGI has continuously grown to become the leader in specialty materials for personal care. PGI will continue to look for investments in the Europe & Middle East Africa region.

USA: P&G Expands Sustainability Goals to Conserve Resources, Protect Environment

The Procter & Gamble Company expanded its sustainability goals to continue creating value with consumer-preferred brands and products while conserving resources, protecting the environment, and improving social conditions for those who need it most. P&G continues to improve the environmental sustainability of its products across all aspects of their life cycle – from manufacturing, packaging and delivery through consumer use. P&G is guided by 12 established environmental sustainability goals toward its vision of 100% renewable energy use, 100% renewable or recycled materials for all products and packaging, and zero consumer and manufacturing waste going to landfills. Since establishing its goals in 2010, P&G has made considerable progress.

There now are 70 zero-waste manufacturing sites; energy consumption, water use, CO₂ emissions, and truck transportation are all down significantly; use of renewable energy and the number of virgin-materials certifications are up substantially. P&G also has expanded its social sustainability work, touching and improving the lives of more than 50 million people each year through disaster relief and programs such as Children’s Safe Drinking Water and the Pampers UNICEF partnership.

USA: Kimberly-Clark Receives US EPA 2014 SmartWay Excellence Award

Kimberly-Clark Corporation was honored with a SmartWay® Excellence Award from the U.S. Environmental Protection Agency as a true industry leader in freight supply chain environmental performance and energy efficiency. Kimberly-Clark was recognized for its continuous improvement in working with transportation providers to find ways to reduce its carbon footprint, in line with K-C’s corporate sustainability goals. They have doubled the usage of intermodal transport, which saved 72 million gallons of diesel and reduced CO₂ emissions by more than 735,000 metric tons - that’s equivalent to taking 138,000 cars off the road for one year. Kimberly-Clark was one of 11 companies to receive this distinction, representing the best environmental performers of SmartWay’s nearly 3000 partners. This is the fifth time the company has been recognized with this honor since 2006. On the occasion of their ten year anniversary, EPA applauds this year’s SmartWay Excellence Award recipients. Their freight efficiency efforts foster a more sustainable economy and strengthen energy security, while generating environmental results.

China: SCA and Vinda to Integrate Hygiene Business in China

SCA, a leading global hygiene and forest products company, and the majority shareholder in China’s third-largest tissue company to transfer its hygiene business in China to Vinda. As part of the transaction, SCA and Vinda have signed an agreement regarding the exclusive license to market and sell the SCA brands; TENA, (incontinence products) Tork (away from home tissue), Tempo (consumer tissue), Libero (baby diapers), and Libresse (feminine care) in China (Mainland China, Hong Kong and Macau). With this agreement, Vinda will hold the rights to these product brands in these Chinese markets. Vinda will acquire SCA’s Dr P and Sealer brands in China.

“With its immense number of inhabitants, ageing population and low penetration of hygiene products, China is an attractive and important market with significant potential for future growth. This new cooperation and transaction will generate mutual benefits for both SCA and Vinda particularly in distribution, sales, innovation and R&D. Vinda will get access to a broader product portfolio and SCA’s brands will have the potential to reach a broader base of consumers and customers via the extensive and robust distribution network of Vinda in China,” says Jan Johansson, President and CEO of SCA.
**USA: PRESTO GEOSYSTEMS® Offers MSE Retaining Wall Software**

PRESTO GEOSYSTEMS®, a leading manufacturer of soil stabilization and stormwater products, introduces their new GEOWEB® MSE design freeware for GEOWEB® geocell wall applications. The software creates vegetated and non-vegetated MSE designs based on the GEOWEB® system for reinforced slopes, and for gravity and geogrid-reinforced walls. The easy to use software is based on industry standard design methods and contains specific algorithms that capture the unique interaction between the GEOWEB® system, infill and backfill soil, and geogrid reinforcement and specific factors of safety. In addition to performing the analysis with logical data input screens, GEOWEB® MSE software creates a full graphic design analysis output and cross-sectional drawings.

**USA: Donaldson Showcased Latest Generation of Eco-Friendly, High Performance Engine Liquid Filters**

Donaldson Company, Inc. a leading, worldwide manufacturer of filtration systems and parts, showcased the company's latest generation of engine fuel and lube cartridge filters at the 2014 Automechanika Show in Frankfurt, Germany. Manufactured using superior direct-bonding technology and metal-free construction, the filters provide an eco-friendly approach that allows for crushing and/or incineration, depending upon local preferences. The filters also feature Synteq media technology, which uses both cellulose and melt-blown synthetic layers to achieve very high levels of filtration performance. This dual-layered media has increased particulate holding capacity and is a high performance water separator. When used in fuel filter applications, Synteq provides high efficiency emulsified water separation and can be used in both the suction and pressure sides of fuel systems making it an ideal choice for critical applications or extended service intervals. Eco-friendly characteristics of this latest generation of fuel and lube filters are achieved, in part, by using a unique direct bonding technology. They offer numerous benefits such as direct bonding of pleats in end cap material maximizes effective media area, while delivering a robust and leak-proof element.

**INDIA: After Japan, Modi to Invite Investments from USA**

After wooing Japanese investments, Prime Minister Narendra Modi is all set to attract more funds from the US for infrastructure development. The Department of Industrial Policy & Promotion (DIPP), on Monday, floated a Cabinet note on setting up a joint mechanism with the US for smooth flow of funds into the country's infrastructure sector with an estimated investment deficit of $1 trillion.

"As per the proposal, Government officials from India would help in identifying infrastructure projects that need funding while officials from the US would shortlist American companies that are interested in investing their money," a DIPP official said. Smart cities and the Delhi Mumbai Industrial Corridor are among the areas of possible cooperation proposed by the US during US Commerce Secretary Penny Pritzker visit in the last week of July. The US, which is India's second largest trading partner after China, has already given a green-signal to the final note prepared by the DIPP.
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Introduction

Body armours have been used to protect human lives since Stone Age. Currently, body armours are available in two forms, namely hard and soft. Hard body armours are typically used for protection of high-risk regions like torso and head from high speed bullet/projectiles. These structures consist of ceramic or steel plates inserted in fabric jackets which make it heavy and rigid. Soft body armours are used as routine wear of police officers and security personnel for protection against lower ballistic threats such as handguns, shotguns and hand grenades etc. Soft armours are generally made from multi-layered woven or laminated fabric structures which are more flexible and lighter than hard armours. High performance fibres are mostly used for manufacturing soft body armours. These fibres have high strength, high modulus, low density and high energy absorption characteristics. Kevlar woven fabrics are often used as the base material for soft body armours. Generally 20-50 layers of Kevlar fabrics are required to stop a bullet fired from a shotgun or revolver. Use of multilayer Kevlar fabrics not only makes the body armour heavy but also limits the flexibility and mobility of the wearer. Hence, there is a need to develop body armours which can provide ballistic protection with improved flexibility and lower weight.

In recent years, application of shear thickening fluids (STF) to improve the ballistic performance of body armor materials has gained the attention of materials scientists as this approach has shown promising results in improving impact energy absorption. STFs are non-Newtonian fluids made up of stabilized dispersions of rigid sub-micrometer particles in a carrier fluid. STFs exhibit sudden increase in viscosity above a critical shear rate, which transforms a liquid dispersion into a material with solid-like properties.

Although a lot of interest has been shown by the researchers in the area of application of STFs on body armor materials, there are still many grey areas. A research group in the Department of Textile Technology of IIT Delhi is working in this area since 2008. The group has active collaboration with Terminal Ballistic Research Laboratory (TBRL), Chandigarh.

Preparation of STF and its Rheological Behaviour

STF can be prepared by dispersing silica nano-particles (100 nm) in polyethylene glycol (PEG) with varying amount of silica loading (50, 60 and 70% w/w). Kevlar fabrics are padded with the STF by using a padding mangle. The nip pressure at the padding mangle can be varied (0.5, 1 and 2 bar). After the padding process, the STF treated fabrics are dried at 80°C for 40 minutes in a hot air oven to evaporate ethanol. The rheological results of STF having 50%, 60% and 70% (w/w) silica concentrations are shown in Fig 1. Temperature was kept constant at 25°C. At 70% concentration of silica particles shows the most prominent shear thickening behavior after a critical shear rate of 80s⁻¹ and the viscosity rises up to 300 Pas. In comparison, STF with silica concentration of 60% shows subdued shear thickening behavior. However at 50% concentration, shear thickening is almost insignificant. Therefore, it can be concluded that shear thickening behavior is facilitated with higher concentration of silica particles.

STF add-on% on Kevlar Fabrics and Impact Resistance Performance

Table 1 presents the summary of the results obtained. Lower padding pressure and higher STF concentration increase the add-on%. In case of yarn pullout force also, the effect of padding pressure and silica concentration is similar. The maximum STF add-on% and maximum yarn pull-out force occur at minimum padding pressure and maximum STF concentration. However, yarn pull-out force results do not agree well with the impact energy absorption results as the maximum value of the latter is achieved at maximum padding pressure and maximum STF concentration. This indicates that increased yarn to yarn friction, represented by higher yarn pull-out force, is only partially responsible for the improved energy absorption of STF treated Kevlar fabrics. Although higher padding pressure reduces the weight add-on%, it ensures better penetration and uniform distribution of the STF within the yarn structure.

![Image](Image 471x579 to 557x642)

Table 1: Performance Matrix Showing the Effect of Process Parameters

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Maximum</th>
<th>Minimum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Add-on%</td>
<td>Highest concentration, lowest pressure</td>
<td>Lowest concentration, highest pressure</td>
</tr>
<tr>
<td>Yarn pull-out force</td>
<td>Highest concentration, lowest pressure</td>
<td>Lowest concentration, highest pressure</td>
</tr>
<tr>
<td>Impact energy</td>
<td>Highest concentration, highest pressure</td>
<td>Lowest concentration, highest pressure</td>
</tr>
</tbody>
</table>

During the padding process, STF enters within the fabric and yarn structures. Thus the pores present between the fibres become partially occupied by the STF. During the impact, the fabric gets deformed at a very fast rate. This causes relative movement of the yarns and fibres. As a
result, the STF which is occupying the inter-yarn and inter-fibre space is also sheared resulting in shear thickening as shown in Fig 2. Thus the solidified fluid now acts as a bridging material which facilitates the stress transfer between fibres and yarns. The entire fabric structure behaves as a coherent body and absorbs greater amount of impact energy.

Analysis of Impact Energy Absorption

This analysis was done with untreated and STF treated Kevlar fabrics having areal density of 200 g/m². The graphs were plotted for force generated and energy absorbed vs test time (in milliseconds). The shape of the plots necessitated dividing them into three distinct zones namely, elastic zone (Zone 1), slippage/ breakage zone (Zone 2) and failure zone (Zone 3). This analysis has been done for untreated and STF treated (70% concentration) fabrics as depicted in Fig 3 and 4 respectively. It is observed that Zone 1 is almost linear. It is assumed that in the elastic zone either the entire fabric or the load bearing yarns (engaged by the impactor) extend up to the elastic limit under the force exerted by the impactor. This extension of the structure/yarns builds up force and partially absorbs the energy of the impactor. Once the fabric is deformed to the limit of the elastic zone, it can either start to fail or absorb more energy if the slippage occurs at the grip resulting in yarn pull-out.

Fig.4 demonstrates that the Zone 2 is also invariably wider for the treated fabric as compared to that of untreated fabric. The Zone 2 is characterized by fluctuating values of force & it is evident in both the plots. These fluctuations are most probably caused by slippage/breakage of yarns, exhibiting almost a stick-slip sort of behavior. As during the slippage/breakage, force cannot increase monotonically, the force curve becomes zig-zag (noisy). In untreated fabric, there is too much fluctuation in this zone which does not lead to any additional build-up of force. However, in STF treated fabrics, force keeps on increasing & there is substantial gain in force as well as energy absorbed by the end of the Zone 2.

Zone 3 is characterized by a drop in force which implies failure of the structure. In untreated fabric, the drop is gradual (wider zone up to ~7.9 ms) which means some yarns which are still engaged with the impactor and are being pulled-out which causes some resistance and this is manifest in continuous albeit slow drop in force and build up of absorbed energy. In case of STF treated fabrics, however, this drop is sudden which suggests catastrophic failure of the structure. This is supported by the visual examination of tested fabrics (Fig. 5).

The untreated fabric clearly shows big loops of yarns formed by the slippage of a few primary yarns in the centre, while rest of the fabric (secondary yarns) remains almost unperturbed. This brings out the inability of the untreated Kevlar fabric structure in engaging secondary yarns in energy sharing during impact. As fewer yarns participate in response to the impact, resistance is lower. While in treated fabrics, the loops are small and broken. In case of STF treated fabrics, it is postulated that at the time of impact, the shear rates build up to such an extent that the STF experiences shear thickening. This causes the STF distributed in the test area to act as a bridging or matrix phase as a result of solidification of the STF. Table 2 summarizes the differences in failure modes for untreated and STF treated Kevlar fabrics.

Conclusions

Application of STF on Kevlar fabrics for soft body armour development is a very challenging area of research. Across the world, only a few research groups are actively working in this area. The present study includes the single layer Kevlar fabrics only. However, for multiple layers of fabrics, the transfer of stress within the fabric structure becomes more complicated. Besides, at very high speed impact (400-800 m/s), the response time available to the fabric structure is also very small. Thus the efficacy of the system will also change with the impact velocity and projectile geometry. Therefore, it is needed to explore the effect of various particle size, shape and fabric structure to elicit the best performance from the soft body armours.
Institute. These included not only mechanical stress testing but also tests to assess the resistance of the textile to destruction by microorganisms. Naturally, the Hohenstein researchers paid particular attention to analyse the heating capability of the textiles. This was judged from the germination behaviour of trial plants both in laboratory conditions and outdoors, in order to optimise the technical characteristics of the heating textile for use operationally.

On the basis of this work, in the winter of year 2012/13 the researchers from the State College of Horticulture and Agriculture put the heating textiles into use in various experimental greenhouses. Alongside the functional analysis of germination behaviour and plant growth, the main focus of these practical tests was on possible negative influences, e.g. from plant fertilisers used in so-called ebb-and-flow hydroponics systems. In this kind of modern irrigation system in the greenhouse, the nutrient solution flood the containers on the benches and is then released again when the plants have absorbed sufficient fluid.

During the first trials, the researchers had problems with salt deposits and corrosion of the heating textiles. The following winter, more experiments were carried out in real-life conditions. To alleviate the problems, the textiles had been specially modified: the researchers tested the suitability of coating films based on wax, latex, silicon and polyurethane. The polyurethane film proved to be the best at preventing the deposits of salts that caused the material to corrode. Plants with the benefit of “underfloor heating” grew significantly better than the comparison specimens, in all test conditions (laboratory, all-weather greenhouse, ebb-and-flow system). The energy consumption was also measured. Depending on the temperature difference which needed to be overcome, ranging from 10 to 20 kelvin, this was from 30-80 kwh/m² per week.

For small to medium-sized areas in the greenhouse, this innovative heating textile is considerably more energy-efficient than ambient heating by conventional heating systems and therefore particularly advantageous for use during sowing or deliberate crop forcing. However, the scientists believe that there is still room for improvement on the durability of the heating elements.
Innovative Textiles to Boost Seaweed Farming

Introduction
Seaweed is an important but under-exploited resource for food and feed ingredients, biochemicals and the production of biofuels. But it has been difficult to harvest it efficiently on a large scale until now. The EU-funded AT~SEA project has developed advanced textiles that give high yields from floating seaweed farms and allow easy, mechanised cultivation.

Project coordinator Bert Groenendaal of Belgium-based Sioen Industries said that “farming seaweed on the scale made possible by the new textiles can help create a multi-billion euro industry in Europe – boosting growth and jobs. The economic potential for seaweed is huge. Businesses are interested in seaweed for many different applications such as food and food additives, animal feed, chemicals and even fuel.” Sioen is one of the seven companies involved in the project, along with four research centres.

Tests of AT~SEA’s textiles at trial sites in Solund, Norway, Oban, Scotland and Galway, Ireland have produced yields of up to 16 kg of wet seaweed per square metre – three to five times the yield of traditional seaweed farming.

About the Textile
Currently, seaweed is obtained by harvesting wild seaweed or by rope-based cultivation. Neither of these scale up easily as both methods are labour-intensive with relatively low yields. The project team have developed textiles that can support large numbers of seaweed plants without breaking up or attracting unwanted plants or molluscs. Bio-sourced coatings on the textiles protect young seaweed and boost growth. The textiles are large, 1 mm-thin mats on which seaweed plants grow and are held a couple of metres below the sea’s surface. When the seaweed is fully grown, ship based machines cut the plants from the mats and direct them to flexible storage tanks made from AT~SEA’s advanced textiles.

In September 2014, AT~SEA started cultivating 200 square metres of mats at each of the three trial sites. The aim was to evaluate their potential for commercial use. Groenendaal estimated yields could increase to 20-25 kg per square metre as the consortium refined its techniques. The AT~SEA consortium has applied for a patent on the textiles. After the project ends in July 2015, the consortium plans to establish a 2 to 3 hectare cultivation site through a commercial company to be spun off from AT~SEA.

The project also sees commercial uses for the textiles beyond seaweed cultivation. These uses include other types of aquaculture and flexible containers for transporting fresh water by sea.

Uses of Seaweeds
There are many potential uses for seaweed. Some are sources of biochemicals for medicines, natural cosmetics and organic fertilisers. Others show promise for sustainable biofuel production if harvested in the quantities needed for industrial production. Food and food ingredients are yet another potential use. Some species are farmed extensively and eaten directly in Asian countries. In Europe, processed foods such as chocolate milk, yoghurts, health drinks and beers contain seaweed polysaccharides such as agars, carrageenans and alginites as binders or emulsifiers. High-value lipids and proteins, antioxidants, gelling agents, vitamins and essential minerals can also be extracted from seaweed for food production.

Large-scale seaweed farming could also have a positive impact on the ocean’s ecosystem. Farmed seaweed can help absorb excess CO₂ in seawater and waste nutrients from nearby fish farms. It also provides safe habitats for wild fish and shellfish that might otherwise be threatened by fishing.

Background
The AT~SEA project supported with €3.4 million in EU funding, brought together 6 SMEs, 1 large company and 4 research centres from Belgium, Ireland, Morocco, the Netherlands, Norway, Portugal, Spain and the UK. The project received funding under the European Union’s Seventh Framework Programme for Research and Technological Development (2007-2013).
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Car seats which warn drivers if they start to fall asleep at the wheel are being developed as part of a study by Nottingham Trent University researchers.

Professor Tilak Dias and William Hurley of the University’s Advanced Textile Research Group will be working with company Plessey on a feasibility study to investigate how to integrate an Electrocardiogram (ECG) sensor system directly into the fabric of car seats in an effort to save lives. It is being funded by the UK’s innovation agency, the Technology Strategy Board.

With driver fatigue a contributory factor in one in five motorway accidents, the aim is to embed a fabric based sensor system within the seat which can detect the heart signals that indicate a driver is losing alertness.

“The Plessey has already demonstrated that cardiac signals can be measured unobtrusively using capacitive sensors mounted within the driver’s seat; the requirement now is to improve the consistency and reliability of the data so that it can be used for the intended purpose. This requires a novel approach to the design of the electrodes, and Nottingham Trent University’s knitted conductive textile technology offers the potential to produce robust electrodes that can be easily incorporated into automotive seats.”

Steve Cliffe, Business Development Director of Plessey

The data would be used to send a warning to the driver to pull over. Should the warning be ignored, the vehicle could engage systems such as active cruise control or lane departure technology to prevent accidents. The information could also be sent over a wireless network to a control centre to take further action.

“We are extremely excited to be working with Nottingham Trent University on this Technology Strategy Board-funded programme. For the first time it will be possible to reliably and robustly extract electrophysiology signals using Plessey EPIC (Electric Potential Integrated Circuit) sensors in an automotive environment without direct contact with the body.”

Professor Tilak Dias, Nottingham Trent University

Faurecia - one of the world’s leading automotive equipment suppliers is presenting its "one touch" technology at the 2014 Paris Motor Show, which can be used to automatically fold down the vehicle’s rear seats. The new Renault Espace crossover, which was unveiled its first Renault production model to feature this innovation.

The result is an ideal blend of three areas of expertise that are central to Faurecia innovation: Complete seat system design, mechanisms and dedicated power solutions, seat electronics and related control systems.

Faurecia was able to define from scratch a solution that would allow users to instantly create more space in the back of the car—an impressive feature that was devised by carefully orchestrating all components involved in operating the rear seats.

The "one touch" function can be used to fold down any seat in the second and third rows using a control unit in the trunk or using the multifunction display on the instrument panel.

“"We are proud to unveil this innovative solution with Renault at the Paris Motor Show, which we expect to appeal to a number of customers. Folding down the seats will now be child’s play and will literally be something that anyone can do, with a simple push of a button. This outstanding achievement is a real tribute to our teams, who successfully worked together to develop a comprehensive solution for Renault. Intuitive, easy-to-use innovation, which makes life easier for passengers, is more than ever a key part of what we are trying to achieve.”

“Faurecia Unveils Its "one-touch" Technology, An Innovative Automatic Seat Folding System

Philippe Aumont, Chief Technical Officer, Faurecia Automotive Seating

The seats and head rests automatically fold into the floor to create a surface that is almost entirely flat, providing more loading room and allowing customers to remodel the car’s interior to suit their personal preferences while ensuring the same high standards of safety and comfort for passengers. The electronic system also locks the system when the seat is occupied or the vehicle is moving. The new innovation, developed in partnership with Renault teams responsible for electronic systems, ensures a seamless integration into the global vehicle electronics.
Wednesday, November 26

09:00-18:30 Exhibition (Diamond Hall, Exhibition Area 3F)

09:00-10:00 Visitor Registration Open, Coffee break and Networking / Visiting exhibition

10:00-10:30 Opening
Kazuhisa Inoue, Chairman, ANNA
Yanxi Wang, Chairman, ANFA
Guest: Tsuyoshi Morishita, Director, Ministry of Economy, Trade and Industry, Kansai Bureau

10:30-11:00 Keynote Speech
"Global Development of Fibers and Nonwovens Business by Asahi Kasei Fibers"
Toshio Takanashi, Asahi Fibers Corp. (Japan)

11:00-12:15 Presentations
"Market Trend of World & Asia nonwovens"
Hideo Tsuchiya, ANFA
"The Present Trend of China Nonwovens Industry"
Xiang Yang, ANFA
"Nonwovens Market Trend in India"
Samir Gupta, ANFA

12:15-13:30 Lunch, Networking / Visiting Exhibition

14:00-15:30 Presentations
"Innovation and Application of Calender Thermo Finishing on super thin nonwoven"
Alex Yu, Chiefwell Engineering Co., Ltd. (Taiwan)
"The Study on the Flame-retardant Nonwoven Material of CRH Train Interiors"
Dr. Zhang Yu, Nantong University (China)
"Carbon Fibre Composite Materials - History and it's Future"
Nobuyuki Odagiri, Toray Industries, Inc. (Japan)

15:30-16:00 Coffee Break and Networking / Visiting Exhibition

16:00-17:20 Presentations
"Nature-Inspired Filter Media Design"
Dr. Kuo-Lun (Allan) Tung, National Taiwan University
"Steam-Jet Technology and its Effect and Characteristics"
Sumito Kiyooka, Kuraray Kuraflex Co., (Japan)

Thursday, November 27

17:20-18:30 Networking

18:30-20:30 ANFA Reception (Garden Hall Annex)

17:20-20:30 Networking

18:30-20:30 ANFA Reception (Garden Hall Annex)

11:00-12:15 Presentations
"The Present Situation of Battery Separator with Nonwovens"
Dr. Masanori Tanaka, Japan Vilene Co. (Japan)
"Development of Synthetic HEPA Filter on using Electro Spinning and Melt-blown Processes"
Kim Jung-kun, Dongwha Vitex Co. (Korea)

12:10-13:00 Lunch, Networking / Visiting Exhibition

13:00-16:00 Product Presentations by Exhibitors

CONTACT:
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EXHIBITION HIGHLIGHTS:

- Over 200 brands on display.
- Raw Material: Resins, Adhesives, Prepreg, UPR & Pigment on display.
- Reinforcements: Glass Fibre, Carbon Fibre, Aramid Fibre, Technical Textile on display.
- Equipment & machinery for composites on display.
- Moulders, fabricators & manufacturers of reinforced plastics showcasing latest technology.

Akash Goyal +91-9582323533 | akash@indiacompositesshow.com | www.IndiaCompositesShow.com
Sterilization wrap has come a long way since it was first introduced more than 85 years ago to maintain sterility for surgical instruments and devices. Now Medline is introducing Gemini wrap, the next generation of sterilization wrap shown to have greater material strength than the competition to ensure the integrity of the sterilization process. In an independent, side-by-side strength test, Medline's new Gemini wrap, constructed with 100% polypropylene, was shown to have greater material strength to resist punctures and tears compared to the sterilization wrap of the next closest competitor.

“The Gemini bonded wrap provides our surgical staff with great confidence in our sterilization process and ensures that our instruments and devices will remain sterile until they’re ready to be used,” said Durenda Dolan, CST, CRCST, CIS, Manager SPD, Norton Hospital, Louisville, Ky. “Our goal is to eliminate the chance for contamination and infection so we can deliver better patient outcomes. Medline’s new wrap helps us do that.”

The Gemini bonded wrap is constructed with two sheets of 100% polypropylene fused together to provide greater strength and improved efficiency. The Gemini wrap can be used with all major sterilization cycles, including pre-vacuum steam cycles, gravity steam cycles, ethylene oxide (ETO) sterilization and STERRAD® sterilization. Offered in five weight grades from lightweight to super heavyweight, the Gemini wrap is also available in a unique dual color wrap with a pink-colored sheet on the outside and blue on the inside, which can help differentiate between instrument sets. Gemini also has a soft, smooth finish, making it easy to handle and fold.

“Perioperative and Central Processing professionals are looking for reassurance that they’re providing the best possible care for their patients,” said Sydney Nye, RN, Vice President of clinical services, Medline. “Gemini surgical wrap provides peace of mind with demonstrated greater material strength that provides an effective barrier against contaminants to preserve and maintain sterility.”
Kimberly-Clark Health Care Introduces AERO BLUE* Performance Surgical Gowns

Kimberly-Clark Health Care announced the availability of the new AERO BLUE* performance surgical gown. This soft, lightweight gown is four times more protective than other comparable surgical gowns while providing users with unsurpassed comfort. AERO BLUE* features a proprietary fabric with innovative core technology that delivers the highest fluid protection available in a Level 3 surgical gown as defined by the Association for the Advancement of Medical Instrumentation (AAMI). The AAMI standards aid in the selection of appropriate protective apparel to keep healthcare workers and their patients safe from fluid exposure. Bodily fluids and microorganisms can be dangerous sources of contamination in the operating room, putting surgical staff and patients at risk for bacterial and viral transmission. Surgical attire that is resistant to penetration by blood and other fluids can help minimize risk of infection by preventing exposure.

"Surgical gowns provide a critical level of safety in the OR, but clinicians often feel they must sacrifice comfort for protection," said Alex Hodges, General Manager, Surgical & Infection Prevention, Kimberly-Clark Health Care. "That's why Kimberly-Clark is excited to introduce AERO BLUE* Performance Gowns. With much higher fluid protection and unmatched comfort, AERO BLUE* represents a significant innovation in perioperative protection."

AERO BLUE*'s new performance fabric has a protective inner core that prevents fluid penetration even under extreme high-pressure testing while allowing moisture vapor to pass through the gown. Additionally, a highly breathable back panel maximizes air flow for cool comfort. The fabric’s copolymer technology provides softness and a flexible fit, giving wearers full range of motion. AERO BLUE* also provides greater resistance to linting and abrasion than other leading surgical gowns.

In head-to-head fluid resistance tests with other competitive single-use surgical gowns currently available, AERO BLUE* delivered four times greater fluid protection than other non-reinforced gowns in the AAMI Level 3 category, and two times greater protection than fabric-reinforced gowns. AERO BLUE* is available in a full range of sizes. It is one of many new innovations in the pipeline at Kimberly-Clark Health Care, which later this year will become Halyard Health, an independent medical technology company focused on preventing infection, eliminating pain and speeding recovery.

Vestagen New Patient Garments to Minimize Pathogen Transmission Inside Hospitals

Vestagen Technical Textiles, Inc. announced a new standard in the patient experience at hospitals. The myComfort™ line of patient apparel is protected by Vestex®, Vestagen’s active barrier fabric that is fluid repellant, breathable and in studies done in a hospital environment, shown to inhibit the growth of bacteria on the fabric. "It’s time to address the role clothing plays in the chain of transmission. We want myComfort™ to be a visible sign to patients that their hospital is committed to safety and dignity. That’s the kind of protection and confidence patients deserve," said Uncas “Ben” B. Favret III, President and CEO of Vestagen.

The myComfort™ garments are launching on the heels of Vestagen’s introduction of a line of protective garments for healthcare workers this summer. The line of scrubs and physician coats are sold under the brand myGuardian™. Both product lines were developed with Vestagen’s proprietary Vestex fabric, offering the only combination of breathability, fluid repellancy and antimicrobial properties in the industry.

Ahlstrom Expands SMS Technology Within its Medical Sterile Barrier Systems Offering

Ahlstrom, a global high performance fibre-based materials company, extends its range of Sterile Barrier Systems (SBS). Ahlstrom Reliance™ Tandem’s extended range now offers sterile barrier systems designed for light to heavy medical instrument trays.

The expanded portfolio consists of grades ranging from a light 35 gsm to heavy 85 gsm, in four main colors: green, light blue, medium blue and deep blue. "The variety of weights allows their customers to better meet hospitals’ needs. The expanded range can be used to wrap light packs all the way up to heavy instrument sets,” states Product Manager, Mark Berman.

The Ahlstrom Reliance™ Tandem range utilizes Ahlstrom’s most advanced SMS (spunbond-meltblown-spunbond) technology, in combination with their wetlaid and crepe technologies, to provide the optimal combination of sterile barrier systems for sequential wrapping. Sequential wrapping or interleaving combines two Ahlstrom SBS wrap sheets. The two sheets, when used together, offer a higher degree of flexibility in terms of performance, technology, and cost.

Ahlstrom, a global high performance fibre-based materials company, extends its range of Sterile Barrier Systems (SBS). Ahlstrom Reliance™ Tandem’s extended range now offers sterile barrier systems designed for light to heavy medical instrument trays.
Identified by the European Commission as one of Europe’s top tech startups Parx Plastics is launching a new biocompatible and non-migrating technology to make polymers antibacterial.

The technology derived from biomimetics is not like the current available solutions that are making use of silver, nanomaterial’s or other harmful substances. The technology makes clever use of one of the human bodies most abundant trace elements; Zinc. This trace element (so not the metal state Zinc) is present in our food and is necessary in our daily diet to maintain a healthy immune system and to build up cells, skin, hair and nails. Making use of this element the patented treatment causes an intrinsic change in existing materials and it results in a surface hostile to bacteria. The material can kill up to 99% of the bacteria on the surface within 24 hours measured following the international ISO norms.

Today’s available solutions are roughly all toxic and migrating from the material they have been put into. These solutions can be harmful for humans, animals and our environment as the active substances leach out of the material and enter our body and cells (like nanomaterial’s can) or end up in our environment and cause damage to aquatic life and our ecosystem.

Not only is the Parx Plastics technology using a fully biocompatible and non-toxic substance but also it is non migrating. There is no substance leaching away from the material to kill bacteria. It is a true incorporation without any substances leaching. Nothing is washed away; the antibacterial property lasts the lifetime of the garment and no substance ends up in the sewage.

Regulations with regards to the use of biocides are getting tighter with every update challenging the market to come up with new and better alternatives or manufacturers are forced to give up on products for specific territories, as it is not worthwhile to follow all registration routes that are being put in force. The Parx Plastics technology is a class of its own in this regards: it is not a biocide and the way bacteria are killed is scientifically known as a mechanical/physical action. This means that registration in the EU for example, is not necessary. It is not a biocide, it makes use of only allowed substances and it does not migrate; it does not get any safer than this.

The technology does not come as an additive. It is a treatment. A treatment that must be applied to the raw materials used to make yarn or fibres. And it is applied to the original material used by the producer. The material (in granulate or powder or any other form) will receive the patented treatment to make the change on nano scale. Luckily not all material has to receive the treatment, only applying the technology to 3% of the material needed will do the trick. The producer does not have to change any of his normal processing and production routines, the only necessary activity is taking care of a homogenous mixing. The treated 3% must be homogenously mixed with the remainder of the material to guarantee an efficient antibacterial property.

The change in the material is on a nano-scale and does not impact the original characteristics of the material. Tests have shown that no impact is noticeable in color, strength, UV resistance, aging, etc. Really only an antibacterial property has been added without touching any of the original characteristics.

The technology or the materials are explicitly not a nano-material as there are no particles used in a nano-dimension. Merely the nano-technology and expertise is used. The applicability of the technology is very wide and because of the unique biocompatible and non-migrating features there is also no limitation in applying it. Applying the technology to synthetic fibres and yarns such as nylon and polyester offers a whole new range of possibilities. Applying the technology will kill stain and odor causing bacteria in a very effective way. It will keep the clothing or garment fresh for longer as it effectively kills the bacteria involved. The initial focus of Parx Plastics had been on plastics that come in contact with...
food and plastics used for medical implants. The reason for this is that applying the technology to food packaging can improve the shelf life of food and using it in implants it can reduce the chances of infections.

“The company has the mission to touch the lives of a billion people and we felt with food and medical related products we can. I must honestly say we had initially overlooked the possibilities in the textile industry,” admits Parx Plastics CEO Michael van der Jagt. “But with athletic apparel increasingly becoming a part of consumers' lifestyles it is a robust market that deserves our attention.”

The company is not quite in the stage yet that they are able to deliver generic solutions to the entire market, but it prefers to select partners that bring expertise and know how to the table. “Working closely with experts from the industry will make us more successful as we know plastics and antibacterial technologies, but we do not know sports apparel. Joining forces should lead to success.”

Parx Plastics claims it offers a better and much more economical solution compared to silver solutions. “Silver is an heavy metal, it is toxic and it is migrating. When washing garments treated with silver, the silver and its function will leach away and particles end up in our sewages and waste water systems,” says Van der Jagt. “More and more evidence is coming available that this is causing severe effects on our environment. Why not to mention the health risks that people encounter dealing with the processing of these raw materials.”

The materials treated by Parx Plastics only need to be properly mixed and hold no additional risks compared to the original material. It can be handled and processed just like the normal material without any dangers or harmful effects, for the workers, for the users and for the environment.
MAKING INDIA A SPORTING NATION

HIGHLIGHTS
- Over 10,000 Business Visitors expected
- Conference on the sector
- Buyer-Seller Meets and get-togethers
- Gala Networking Dinner
- Live Demonstrations
- Iran Pavilion

EXHIBITORS’ PROFILE
- Stadium Infrastructure / Sports Stadium Facilities
- Outdoor / Indoor / Track & Field Sports Equipment
- Fitness Equipments & Accessories
- In-Line Sport Equipment
- Camping & Water Sports Equipment
- Shoes & Apparel
- Toys & Games
- Federations & Institutions
- Broadcasters & Media

INDIA SPORTS
exo 2014
AN INTERNATIONAL EXHIBITION & CONFERENCE ON SPORTS
6 - 8 November, 2014
Major Dhyan Chand National Stadium, New Delhi

For participation at Exhibition, contact:
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www.indiasports.org
Composites industry professionals, moulders and end-users representing a variety of sectors would gather for networking, learning and business opportunities. ICS 2014 is co-located with India Composites Conference, a two day program focusing on the trends, challenges and opportunities faced by the industry. Technical textiles and adhesives and sealants are also special features of the event. Last year, India Composites Show was attended by 3,910 trade visitors from 37 countries and featured 86 exhibitors. At ICS 2013, 37% visitors were final decision makers, 44% had recommending role in decision making, 78% evaluated for future purchases and 80% fulfilled their objectives of the visit.

At ICS 2014 more than 175 raw-materials, equipments, machineries and solutions will be displayed representing solutions such as raw materials, fabricators, composite products, process machinery, technical textile, intermediate products, equipments. Exhibitors from India and other nations including China, Taiwan, Italy, Japan, Korea, France, Germany and USA are participating. ICS also features 'Composites Europe' exhibition pavilion.

"Currently, Indian composites market is experiencing a transition in terms of technology and demand. It is therefore important to constantly upgrade and meet the changing needs of the market. ICS gives you an opportunity to explore the latest solutions & connect with the core of the industry" said Anuj Mathur, Managing Director of Reed Manch Exhibitions, organisers of India Composites Show.

The India Composites conference taking place on 10-11 December will be featuring topics such as aerospace composite materials, current and future trends of carbon fibre in India, Renewable value: Remarkable success in the recycling of composites, Epoxy and polyurethane systems solutions for filament winding composites, lightweighting and cost reduction in automotive, Electrical & electronics: The future for composites, advanced technical textiles and emerging applications, adhesive solutions for transportation & construction industry and the recent initiatives for composite application in the new sectors.
Near to you for the best performance
In every place.

We design and build cutting edge machineries to manufacture hygiene disposable products such as baby diapers, adult incontinence and sanitary napkins. Our customers can always rely on us thanks to our operating sites in Italy, Brazil, China, USA and in other 24 countries through the Coesia worldwide network.

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Since they came into existence, spunbond and meltblown technologies have always been associated with one particular application i.e. hygiene. Due to a steady market growth and further development of disposable products for baby care, fem hygiene and medicine, the market share of spunbond and meltblown fabrics has constantly been increasing. The interaction of market and technology will also take place in the future: Demands of the market will compel technological progress and technical developments which in turn, will widen up the existing market segments and open up new market segments for the spunbond and meltblown technologies.

There are several existing market segments which are growing besides pure hygiene products. The area of medical textiles is one of these market segments. Spunbond applications as well as combinations of meltblown and spunbond fabrics known as SMS products are possible here. Medical textiles include more simple applications like medical gowns and drapes, and more sophisticated barrier textiles such as face masks and textiles used during surgeries. These textiles are more and more used as single use textiles. By utilizing the meltblown technology also high-efficient filters are produced. These products are more and more used due to the growing demand for filter media of the highest separation grades which will gradually replace glass filter media in the marketplace. In the future, it will be possible to produce such high-efficient filters geared to market requirements by combining different meltblown technologies that allow a combination of meltblown fabrics with different filament diameters ranging from 0.1 to 5 µm.

For more information, visit: www.reicofil.com

Teijin Named to Dow Jones Sustainability Asia/Pacific Index for Sixth Consecutive Year

Teijin Limited announced that it has been named to the Dow Jones Sustainability Asia/Pacific Index (DJSI Asia/Pacific), a global benchmark for socially responsible investing, for the sixth consecutive year. DJSI, which was jointly introduced in 1999 by Dow Jones and Swiss-based RobecoSAM, which researches and evaluates socially responsible investment, is a leading index of sustainability. Every year, the index assesses the economic, environmental and social performance of some 3,300 companies to identify those that demonstrate sustainability leadership. Teijin was named one of the five Japanese companies among the 10 firms in the DJSI Asia/Pacific’s chemical industry. In total, 148 companies out of 600 were selected for this year’s index. Teijin is also included in other international SRI indices, such as the FTSE4 Good Index and the ETHIBEL Investment Register. Teijin appreciates the continued recognition of its leadership in sustainability through responsible industrial development befitting customers, society and the environment, as well as the shareholders.

For more information, visit: www.teijin.com

Curt G. Joa/Bikoma Launches New Baby Diaper Production Line

The JOA/Bikoma alliance has successfully launched a new baby diaper production line into the market in the third quarter of 2014. The JB600 is a new machine model for the medium tear market. It is the ideal match for the established producers who want to increase their production capacities as well as for producers entering a new market. A compact machine with the latest servo-drive technology offers a small foot print. It is a versatile machine concept to produce baby diapers with a zero waste back ear design, a low waste back ear design or T-shaped diapers, depending on customer requirements.

All high-end core designs with maximum SAP concentration in a continuous or discreet version (tea-bag) are possible. Due to the short machine design and automatic quality control systems, high production efficiencies can be expected. The machine is easy to operate with open access to all process and maintenance areas and also offers remote trouble-shooting support. With a mutual engineering effort of this machine and the manufacturing of the machine in Germany, the JOA/Bikoma alliance strengthened its global cooperation for the benefit of all international customers especially in the emerging markets.

For more information contact Mr. Michael Gritzbach at JOA Europe by email on “mgritzbach@joa.com”
Focused Workshops at IIT Delhi

During the International Conference on Technical Textile & Nonwovens (ICTN 2104), Department of Textile Technology, Indian Institute of Technology, Delhi is also organizing very focused Workshops on Wovens, Nonwovens & Textile Reinforced Concrete, with the aim of providing an overview and imparting knowledge on the above mentioned topics.

Date: 6-8, November 2014
Venue: IIT Delhi

WORKSHOP - I (9 AM to 2 PM on November 6, 2014)
Opportunities for Industrial Fabric Producers: Innovation in Weaving Technologies
By Dr. Abdel-Fattah M. Seyam, Professor, North Carolina State University, USA

Recent years have seen great strides in innovations and versatility in weaving and weaving preparation technologies that were brought by the machine manufacturers to meet the demand of weavers. These innovations include new indirect and sample warpers for short and medium runs, automation, new dobby and jacquard shedding systems with individual harness and warp yarn control, new high-speed leno fabric formation systems, adaptive control systems in air jet weaving, waste saving opportunities, energy reduction, and on-loom fabric inspection. In this workshop, an extensive review and technical critical evaluation of the recent advances in weaving and weaving preparation technologies will be provided.

WORKSHOP - II (9 AM to 2 PM on November 6, 2014)
Nonwoven - A Broad Field of Opportunities

By experts from Institutfür Textiltechnik (ITA) of RWTH Aachen University, Germany

Target of the workshop is to give an overview of applications and which technological steps are required to fulfil the market requirements. Instructors will guide participants on their way, starting at the point where a general decision about applicability of a nonwoven is to be made; introducing various methods of fiber consolidation and ending with a good sense for what the most promising path is. The workshop will contain interactive elements, helping the participants to enhance their abilities to select the right technologies for their particular needs. Taking instructor’s background into account, focus will be on spunlaid and meltblown technology.

WORKSHOP - III (2:45 PM to 7:15 PM November 7, 2014)
Textile Reinforced Concrete
By experts from Institutfür Textiltechnik (ITA) of RWTH Aachen University, Germany

Concrete made with Portland cement has certain characteristics: it is relatively strong in compression but weak in tension and tends to be brittle. The development and application of Textile Reinforced Concrete (TRC) incorporates the structural load-bearing capacity in arbitrary directions. Regarding strengthening or repair of existing concrete structures it may be highly desirable to have very thin additional load carrying layers applied to structures. This cannot be realized with steel reinforcement, as steel rebars require an additional layer. As an alternative, a textile reinforcement consisting of fabrics of alkali-resistant glass fibres may be considered. Such fabrics are thin compared to steel bars and do not suffer from corrosion when exposed to common atmospheric conditions. In this workshop, the features and scopes of using TRC in construction industry will be dealt with in details.

Fee Structure

<table>
<thead>
<tr>
<th>Participants</th>
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<th>Foreign Participants</th>
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