Inside This Issue

ITTA ACTIVITIES ........................................... 6

DEVELOPMENT OF INDIAN STANDARDS ON TECHNICAL TEXTILES ...................... 12

MEMBER’S FORUM ........................................ 14

ITTA PUBLICATION ....................................... 15

INNOVATIONS AND TECHNOLOGY

A way to recycle Carbon Fibre Plastics ............................................................... 16
Carbon Fibre Based Unidirectional Fabric for Wind Turbine Blades .............. 17
First scalable graphene yarns for wearable textiles produced .................. 17
New PPS Resin of Highest Flexibility Level ....................................................... 18
Self-Powered, Washable Textiles May Pay Way for Smart Clothing ............. 19
SAERTEX collaborating with Scott Bader for fire protection material system ................................................................. 20

NEW MEMBER ............................................. 21

UPCOMING EVENTS ..................................... 22
“NATIONAL INVESTORS’ CONCLAVE ON TECHNICAL TEXTILES”

NICTT 2019

Organised By

ITF
INDIAN TEXPRENEURS FEDERATION

INDIAN TECHNICAL TEXTILE ASSOCIATION

sima

ON - 24th APRIL 2019
AT - THE RESIDENCY TOWERS
Coimbatore, India

Interested in Technical Textiles?

Dont know how to approach the Subject?

This is your opportunity!!

For the First time ever project proposals easily explained

Eminent Speakers from all fields of Technical Textiles
ABOUT ORGANISERS

ITTA -
▷ The Indian Technical Textile Association (ITTA) is the Voice of the technical textiles industry in India
▷ ITTA membership represents the entire technical textile value chain from raw material to finished goods producers, machinery manufacturers, consultants, centers of excellence and R&D institutes.

ITF -
▷ Indian Texpreneurs Federation (ITF), is a novel success story of collaborative growth, representing the entire manufacturing gamut of Textile sector in Tamilnadu. Its one of the largest such textile entrepreneurs' network in the country.
▷ Its a unique platform that encourages knowledge sharing and promotes a spirit of cooperative competition among its members.

SIMA -
▷ Established in the year 1933 by Sir R K Shanmugam Chetty, the first Finance Minister of independent India,
▷ SIMA is the single largest employers organization representing the entire textile value chain right from cotton research and development to garments/made-ups/technical textiles in the country and plays a lead role in all policy making committees at State and Central level pertaining to the textile industry.

CONCLAVE PRESENTERS/ SPEAKERS
▷ COEs & TRAs  ▷ Consultants
▷ Govt. R&D Agencies  ▷ Individual Specialists
▷ Technology & Machinery Manufacturers
SOME OF THE NOVEL TECHNOLOGIES AVAILABILITY

- Biodegradable Polymer Manufacturing & applications
- Nanofiber application to improve anti-clogging property of Geotextiles
- Polymeric Pressure Sensor for smart wearable textiles
- Flexible conductive fabric for EMI shielding application
- Textile Hard Waste Recycling Line for Automotives
- Airlay Nonwoven Lines for high bulk nonwovens
- Digital Printing applications and products

WHO SHOULD ATTEND

- Potential new Investors
- Manufacturers who want to diversify
  - Start-Ups
- Agents/ Dealers/Distributors

DELEGATE BENEFITS

- It will generate valuable exposure to the participants by providing them cost effective and accessible products/solutions.
- Product development facilities, opportunities.
  - Investment in new technologies
  - Help to create their own supply chains.
- Will bring finance, knowhow and technology.
  - It will generate employment.
- Provide opportunities to Collaborative innovations, JV, etc in different untapped areas.
NATIONAL INVESTORS CONCLAVE
ON TECHNICAL TEXTILES

DELEGATE REGISTRATION FEES

<table>
<thead>
<tr>
<th>Category</th>
<th>Amount, INR (Including 18% gst)</th>
<th>Registration fee covers admission to all presentations, lunch &amp; refreshments during conclave.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITTA/ITF/SIMA</td>
<td>Rs 2360/-</td>
<td></td>
</tr>
<tr>
<td>Members</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-Members</td>
<td>Rs 3540/-</td>
<td></td>
</tr>
</tbody>
</table>

MODE OF PAYMENT

i. Payment by DD/Cheque in favour of INDIAN TECHNICAL TEXTILE ASSOCIATION payable at Mumbai.
ii. Payment can also be made directly into bank Account -
A/C. Name INDIAN TECHNICAL TEXTILE ASSOCIATION
Bank Name Bank of Baroda, Ghatkopar (W) Branch, Mumbai 400086
Current A/No. 04220200000491
IFSC Code BARB0GHATKO

LEAD PARTNER

SHIVA TEXYARN LIMITED

STRATEGIC PARTNER

Nissenken

MEDIA PARTNERS

For more information on Conclave & Partnership, Kindly contact

INDIAN TECHNICAL TEXTILE ASSOCIATION
A’Block, BTRA, L.B.S. Marg, Ghatkopar (W), Mumbai 400086
Tel: 022-25003098; Mob: 09769464616, Email: contact@ittaindia.org, Website: www.ittaindia.org

INDIAN TEXPRENEURS FEDERATION
104-ARaheja Centre, 1073& 74, Avanashi Road, Coimbatore-641018,
Mob: 08220544844, Email: hr@itf.org.in, Website: www.itf.org.in

THE SOUTHERN INDIA MILLS’ ASSOCIATION
41, Race Course, Coimbatore 641 018,
Phone: 91 422 4225333, Email:info@simamills.org, Website: www.simamills.org
The objectives of the visit were enhancing sourcing from India for apparel, handicrafts and handloom products, enhance investment opportunities in India and having collaboration in joint venture for strengthening textile value chain, collaborative units for accreditation centres to reduce time and cost for procuring Japanese accreditation and collaborations for strengthening the technical textile value chain in India.

Many of the meetings were held during this delegation visit to Japan. One of the meetings was held at Teijin Limited on 15th February 2019 where the members from Teijin were present and the complete Indian delegation. Mr. Tsunehiro Ogawa, Teijin Group Executive Officer mentioned that they are having presently over capacity of their production of these speciality fibers like aramid, carbon, etc. at their plants in Japan, Thailand etc. and they request Indian counterpart to buy these yarns from them. It is not possible for them for any investment in India for setting up capacities for production of such units In India. They mentioned that the prices of these yarns coming from other countries are very cheap and hence they are not able to compete.

Mr. Amit Agarwal, Vice Chairman – ITTA gave a presentation on behalf of the Indian Technical Textile Association. He mentioned that Teijin has a presence in India since a decade now having offices in Pune and New Delhi but working only as a supplier of fiber materials manufactured outside India. The presentation outlined the steps and suggested 3 steps for the way forward.


2. Stage II – Teijin would supply raw materials
Indian Technical Textile Association (ITTA) has forged Memorandum of Understanding (MOU) with Taiwan Technical Textiles Association (TTTA) to promote Technical Textiles in India and Taiwan. The Vice Chairman ITTA - Mr. Amit Agarwal signed this MoU with Mr. Alex Lo - Chairman of TTTA. This relationship will benefit Member companies of both the countries.

The MOU was signed in the presence of Shri. Sridharan Madhusudhanan – The Director General –

MoU between Indian Technical Textile Association (ITTA) and Taiwan Technical Textiles Association (TTTA)

from Japan for manufacture of End products in India – Hence the demand can increase many folds.

3. Stage III – Once the volume reaches a trash hold volume - Teijin can think of Investment in India under JV with any Indian company – Under the "Make in India” programme.

Shri. Raghavendra Singh, Secretary (Textiles) informed about India’s renewed focus on developing technical textile value chain and the intent to make policy changes that make it mandatory to use technical textile in certain areas. In areas like agriculture, shipping, meditech etc. where India feel exports needs to be promoted, we may make use of technical textiles mandatory. Hence huge potential for technical textiles in Indian domestic market. Following actions to be taken:

1. A list of products can be given by Teijin for the products manufactured from these speciality yarns.

2. Atleast 10 potential projects could be outlined and project reports to be prepared and market study of such projects needs be done.

3. Coordination to be done with Teijin India Pvt Ltd. having its office in India for preparing a programme/seminar/ workshop in coordination with ITTA.

4. Manufacturers of these end use products to be invited in this programme and one to one meeting for any JV proposals.

5. A cluster where in Japanese companies – (JV projects) could be set up where in all basic raw materials could be available in stock – Just in time – for these units.

6. A delegation led by ITTA to visit Japan to these companies and support of Indian Embassy in Japan to this delegation be given.
The meeting with Nodal Officers of Ministry of Railways & Senior Officials of ITTA was held on 8th March 2019 at Rail Bhawan, New Delhi to discuss on the Technical Textile items used in Indian Railways. The meeting was attended by Mr. Amit Agarwal-Vice Chairman, Mr. Dhaval Patel-Director, Mr. Mahesh Kudav, Mr. Praveen Gulati and Mr. Mohammad & Ms. Lalita Teckchandani from ITTA.

The meeting started with the presentation from Ministry of Railways wherein they shared the details and progress in Indian Railways by nodal directorates and also about the items identified by Ministry of Textiles for mandatory usage in Indian Railway. Afterwards, Mr. Amit Agarwal gave the presentation about ITTA and its achievements and earlier events. He also gave presentation on Geo synthetics. And in the process mentioned that they had supplied Biaxial geo grid in their Jhansi Lalitpur section in June 2017.

Mr. Mahesh Kudav gave presentation on Protective

India Taipei Association. This is the representative office of the Government of India in Taiwan. [https://www.india.org.tw](https://www.india.org.tw). ITTA will be now listed on the official website of The India-Taipei Association. This has added another cap to ITTA and ITTA management continues to add value to ITTA members and take ITTA to new heights.

For all your requests/queries for trade with Taiwan and Joint Ventures may be sent to undersigned-ed@ittaindia.org and we will be more than happy to forward the same to the Taiwanese counterpart. Details of Taiwanese members are available on the website - [http://www.ttta.org.tw](http://www.ttta.org.tw)
textiles which covered Body Protection, Hand Protection, Respiratory Protection & Fall Protection Devices. He explained that currently protective garments are used in various sectors. The presentation concluded with a list of additional Textile Protech products that could be considered for making mandatory.

Mr. Dhaval Patel gave presentation on Composites. He mentioned that they are using composites since the last 20 years – (plastics reinforced fiber products) and its importance and usage in Indian Railways.

Mr. Jawahar Lal, Director (Efficiency & Research) Mech. Engg, said that they have listed out the 3 major items which can be taken up first i.e. FR treated Bed roll including bed sheet and Pillow, Railway Track bed stabilization – Biaxial PP geogrid (extruded) / Geo Cell / Geotextile – Nonwoven and Medical Textiles. He also said that all the presentation from ITTA in different sectors of Technical Textile product is very useful for Indian Railways. He also told that Ministry of Railways will be interested in working with ITTA.

CEO Conclave—Investment & Partnership Summit held in Hyderabad

CEO CONCLAVE- Investment & Partnership Summit was held on 19-20th February 2019, at Hyderabad International Convention Centre, Hyderabad. The theme of the conclave was Reviving Confidence in Textiles. The event was supported by ITTA. The event was supported by Telangana Government and Telangana Textile Mega Textile Park.

The event attracted the corporate textile leaders like Owners, MDs, Directors, CEOs, Investors and Stakeholders across the supply chain right from fibre, spinning, weaving, finishing, and technical textiles and garmenting. The 2 days event had a Felicitations/Awards ceremony for the Highest Contributions to the Textile & Apparel Industry and
Conference focused on Strategies to Rejuvenate & Revive Confidence in Textiles.

The Felicitations/Awards ceremony was organised by Government of Telangana. Dr. Anup Rakshit, Executive Director, ITTA was awarded and felicitated by Shri. Jayesh Ranjan, Principal Secretary of Industries & Commerce, Telangana Government and Shri. Mihir Parekh, Director, Kakatiya Mega Textile Park, Telangana State Industrial Infrastructure Corporation for the Associations’ Excellent Contributions to Textile & Apparel Industry.

The conference had a Panel Discussion on the Topic: Global Trade & Exports: Growth Opportunities in the Textile & Apparel. The panelist were Mr. Prem Malik, Vice Chairman-NSL Textiles, Mr. Amit Gugnani, Sr. VP-Technopak, Mr. Ujwal R Lahoti, Past Chairman-Texprocil, Mr. Balaraju Sampathirao, Chairman-SRTEPC, Dr. Roopak Vashishta, CEO & DG-Sector Skill Council for Apparel/textile & Handicraft, Mr. Harish Dua-AEPC, Mr. Arvind Mathur, CEO- Raymond UCO Denim, Mr. Felix A. Fernando, Past Chairman-Sri Lanka Apparels Exporter Association and Dr. Anup Rakshit, ED, ITTA.

Following points were discussed during the panel discussion-

a. Going Global is the way forward.

b. Emerging opportunities in new tariff alignments like Trade War.

c. Growing in the wake of not so favourable FTAs situation -India is not part of CPTPP, RCEP and OBOR.

d. Industry needs to be ready for the abolition of some existing export subsidies as per WTO norms.

e. New Sectors, Increasing product basket.

f. New Markets: Emerging and Non Traditional markets.

g. Indian manufacturers exploring outside like Ethiopia for setting up production units to take advantage of cheaper inputs costs, labour, proximity to markets.

h. Technical Textiles for the world.
The Bombay Textile Research Association and IGS Mumbai Chapter organized the Lecture on Composite Application and Evaluation & Testing of Geosynthetics with respect to Durability and Endurance for prediction of life by Dr. George Koerner, Director, Geosynthetic Institute (GSI), USA on 8th April, 2019 at BTRA, Mumbai. The lecture was attended by Mr. Amit Agarwal, Vice-Chairman, ITTA and Dr. Anup Rakshit, ED, ITTA.

Delegates at lecture on Composite & Geosynthetics

Mr. Amit Agarwal, Vice Chairman, ITTA, Dr. George Koerner & Dr. Anup Rakshit, Executive Director, ITTA at lecture on Composite & Geosynthetics
The 22\textsuperscript{nd} meeting of Geo-synthetics sectional committee-TX 30 in joint session with 11\textsuperscript{th} meeting of Industrial fabrics sectional committee-TX 33 was held on 26\textsuperscript{th} February, 2019 under the Chairmanship of Dr. A. N. Desai at Conference Room, Andheri. As the member of committee, Dr. Anup Rakshit, ED, ITTA attended the meeting.

**Highlights of TXD 33 - Industrial Fabrics:**

i. The committee scrutinized the list of following new Subjects related to TXD 33 as forwarded by the Office of Textile Commissioner for formulation of standards (Products and test methods): Paper making fabrics, Insulation felts (NVH components), Helmets, Railways seating fabrics, Soft luggage product (TT component), Tea-bags (Woven or nonwoven), Filter fabrics for HVAC and Vacuum cleaner, Nonwoven wipes, Decatising cloth and Bolting cloth. After detailed discussions, the committee constituted a small panel for preparing the preliminary draft on the above subjects.

ii. The committee scrutinized the following subjects which were identified during BIS-Industry interaction in Textiles and Technical Textiles Sector for formulation of Indian Standards on Priority: Static covers, Auto canopies, Inflatables, Upholstery, Awnings, Architectural applications, Tents and Hangar covers. The committee decided to constitute a small panel under the convenership of Dr. Anup Rakshit, ITTA for preparing the preliminary draft standards. The composition of the above panel shall be as follows:

- Dr. Anup Rakshit (Convener), ITTA, Mumbai
- Shri V K Patil, BTRA, Mumbai
- Smt. Aswini Sudam, SASMIRA, Mumbai
- Shri Mahesh Sharma, Reliance Industries Ltd., Mumbai
- Dr. M K Talukdar, Kusumgar Corporates, Mumbai
- Shri A R Rajesh, SRF, Chennai
- Shri V Muthukumar, PSG College of Technology, Coimbatore
- Representative from Entermonde Polycoaters Ltd., Nashik
- Shri Rajendra Ghadge, Garware Technical Fibres Ltd, Pune

**Highlights of TXD 30 - Geo-synthetics:**

i. The committee scrutinized the minutes of the meeting of the panel constituted to prepare the preliminary draft Indian Standard on Geo-Synthetics- Reinforced HDPE Geomembrane for Effluents and Chemical Resistance Lining – Specification. After detailed discussions, the committee decided as follows:

- Title of the draft shall be modified as 'Geo-Synthetics- Reinforced HDPE Membrane for Effluents and Chemical Resistance Lining – Specification'.
- HDPE and PVC pipe standard do not specify any type of standard effluent and the same shall not be considered.

The committee also decided that preliminary draft shall be prepared based on the above decision.

ii. The committee scrutinized the following working drafts prepared by the panel constituted for the purpose:
a) **Specification for Geogrids used as Soil Reinforcement in Reinforced Soil Retaining Structures** - The committee scrutinized the above draft and Table of requirements provide by BTRA for geogrid along with the clarification as sought by BIS Directorate General and also comments received from M/s Maccaferri Environmental Solutions Pvt. Ltd. After detailed discussions, the committee decided that all the above information shall be circulated to the committee members for a period of 1 month for their study and scrutiny and after that fresh preliminary draft will be prepared by the panel shall be issued in wide circulation.

b) **Test Methods on Environmental Degradation of Geogrid (Weathering, chemical and biological degradation)** - The committee decided that draft Indian Standard shall be prepared by BIS based on ISO/TR 20432 and the same shall be issued under wide circulation.

c) **Test Methods on Installation Damage & Test Methods on Pull-out Resistance** - The committee decided that fresh preliminary drafts on the above subjects shall be prepared by Shri V K Patil from BTRA after incorporating the clarification sought by BIS Directorate General. The committee further decided that fresh drafts so received shall be issued in wide circulation.

iii. The committee scrutinized the list of following new Subjects related to TXD 30 as forwarded by the Office of Textile Commissioner for formulation of standards: Non-Metallic Gabions (used to prevent landslides), Geo-nets (extruded polymer ribs set in net like fashion with small apertures) and Geo-composites (product using two or more Geo-textiles e.g. Pre-fabricated Drains-PVD). After detailed discussions, the committee constituted a small panel for preparing the preliminary draft on the above subjects.

**Finalized for Printing**

i. The committee scrutinized the draft Indian Standard on 'Water flow capacity in their plane [DOC. TXD 30(12484)]'. After detailed discussions, the committee decided that the above draft standard shall be finalized for publication as Indian Standard after incorporating the some changes.

The committee scrutinized the Indian Standards due for review under TXD 30 and TXD 33 and decided to reaffirm these Indian Standards for a further period of five years.

The development of the Centurion 3 involved two phases of research co-funded by OGIC. Phase one saw the development of the water-triggered heat-generating materials, which led to Phase two, in which the heat-storage material was further developed for use within the prototype Centurion 3 garments.
A.T.E., Rabatex Industries and Karl Mayer signed a contract for setting up a joint venture on March 29, 2019. The legally independent company is called Karl Mayer Textile Machinery India Private Limited and has its registered office in Mumbai and production facility in Ahmedabad.

Karl Mayer is the majority shareholder and takes responsibility for the management of the new company. Karl Mayer Textile Machinery India Private Limited will focus mainly on the manufacturing and sale of warp preparation machines and creels mainly for Indian market, as well as service and spare parts sale for warp preparation and warp knitting machines. By means of the newly founded entity, the joint venture partners aim to enhance their position and distribution in the Indian market. Moreover, it is intended to make good use of the existing competencies and synergies, especially in terms of purchasing and customer service.

“With the further development of our international organisation, and with our proven way to produce in our main markets, we want to continue to make a contribution to the long-term success of our customers. We are really proud of setting up this joint venture. By pooling our strengths, we will be able to even better support our customers, being close to them in the local market,” Mr. Arno Gärtner, CEO of Karl Mayer said.

“We are honoured to deepen our relationship with Karl Mayer and start a new relationship with Rabatex with this new joint venture. We thank our many customers that have encouraged us to take this step with their continuous support. We are confident we will be able to serve them better,” Mr. Anuj Bhagwati, managing director of A.T.E said.

“We are striving for market leadership in India and supporting the 'Make In India' initiative of the Government of India. By combining our know-how and our resources in the field of warp preparation machines, we can provide solutions to our customers with exactly those things which they require for their competitiveness, from production to customer service and support,” Mr. Pawan Kumar Singh, managing director of Karl Mayer Textile Machinery India Private Limited said.

“Rabatex is excited about this association with Karl Mayer, a technology leader in warp preparation machine industry and A.T.E., India’s leading customer focused textile machinery marketer. Our respective strengths will help us in providing advanced technology machinery backed by professional aftersales service to the Indian textile industry,” Mr. Haresh Panchal, Managing Partner of Rabatex said.
1888 Mills, LLC based in USA is a global manufacturer of home and commercial textiles catering to the retail, hospitality and healthcare markets has announced a new line of home textiles featuring DuPont Industrial Biosciences' DuPont Intellifresh odour protection technology that will keep fabrics fresher and clean smelling longer. The products, including bath towels, sheets, shower curtains and kitchen towels, will be marketed through multiple brand offerings, such as the 1888 Mills' new Freshee line, along with private label retail brands at select retailers.

The Freshee brand offering is a direct response to inquiries from 1888 Mills’ customers seeking solutions to preventing musty smells that build up over time, particularly in towels. DuPont offered a proven solution with Intellifresh, a built-in odour protection solution that prevents and minimizes odour-causing bacteria from forming on treated fabric surfaces.

The protection, which is enabled by Silvadur technology, begins by absorbing odours that may already be on the fabric and then attacking the bacteria to reduce continued odour formation or build-up. This value-added protection helps fabrics stay clean and fresh smelling longer, meaning they may not need to be washed as frequently, which saves water and energy.

“Removing smells or odours is one of the primary laundry goals around the world, but as many 1888 Mills customers can attest, those odours can be very difficult to remove,” said Mr. Karel Williams, Global Business Development Director, Microbial Control, DuPont Industrial Biosciences. “It is much more effective to stop these odours before they have a chance to latch onto our fabrics. We cannot wait for consumers to be able to outfit their homes with 1888 Mills textiles, protected by Intellifresh.” In an effort to help provide a solution, 1888 and DuPont innovation teams have worked collaboratively to deliver a built-in, odour-reducing solution for home and bedding products.
Scientists at the Washington State University (WSU) have a way to recycle carbon fibre plastics, used in everything from modern airplanes and sporting goods to the wind energy industry. The work reported in Polymer Degradation and Stability and Green Chemistry, mentions ways to re-use the expensive carbon fibre and materials that make up the composites.

Carbon fibre reinforced plastics are increasingly becoming popular in many industries, particularly aviation, because they are light and strong. They are, however, very difficult to break down or recycle. While thermoplastics, the type of plastic used in milk bottles, can be melted and easily re-used, most composites used in planes are thermosets. These types of plastics are cured and can’t easily be undone and returned to their original materials.

To recycle them, researchers mostly have tried grinding them down mechanically or breaking them down with very high temperatures or harsh chemicals to recover the expensive carbon fibre. Oftentimes, however, the carbon fibre is damaged in the process. The caustic chemicals used are hazardous and difficult to dispose of. They also destroy the matrix resin materials in the composites, creating a messy mixture of chemicals, and waste problem.

They developed new chemical recycling methods that used mild acids as catalysts in ethanol, mixed ethanol/water or water alone at a relatively low temperature to break down the thermosets. In particular, it was the combination of catalyst and solvent that proved effective. To break down cured materials effectively, the researchers raised the temperature of the material so that the catalyst-containing liquid can penetrate into the composite and break down the complex structure. The solvent (for example, ethanol and/or water) was used to first make the resins expand and then to break down carbon-nitrogen bonds or ester bonds by the effect of catalyst.

It is critical to develop efficient catalytic systems that are capable of permeating into the cured resins and breaking down the chemical bonds of cured resins in aqueous medium or benign solvents like ethanol. The researchers were able to preserve the carbon fibres as well as the resin material in a useful form that could be easily re-used. They have filed for two patents and are working to commercialize the process.

Towards this, WSU industry partnered with Global Fiberglass Solutions (GFS), an industrial fiberglass recycling and manufacturing firm headquartered in Bothell, WA is poised to take this technology to a booming composites market in dire need of recycling solutions. The CFRP market is set to reach $20.3 billion by 2020, the industry growth accelerated primarily by aerospace giants Boeing and Airbus. GFS and the state-funded Joint Centre for Aerospace Technology Innovation (JCATI) together provided funding for the work. GFS is embracing WSU’s “Smart Systems” Grand Challenge as an industry partner.

[Source:https://www.chemarc.com/content/article/wsu-team-devises-way-to-recycle-carbon-fibre-plastics/5ca1a51fb55203355782ba71]
Carbon Fibre Based Unidirectional Fabric for Wind Turbine Blades

Finland based Ahlstrom-Munksjö glass and carbon fibre composite team has developed a Carbon Fibre based Unidirectional (UD) Fabric. In a UD fabric, the majority of fibres run in one direction only. The new fabric developed, can be laminated to 165 layers or even more in one shot. The previous record of infusing carbon fibre unidirectional fabric was 120 layers.

“We are really excited about the new HighFlow carbon unidirectional fabric. Our team in Mikkeli plant, Finland, did excellent work with this,” said Mr. Pekka Helynranta, Vice President of Ahlstrom-Munksjö. “HighFlow carbon wind energy is specially designed for wind turbine blades to enable larger new generation wind turbines.

“Bigger wind turbines can generate more energy. Increase in size means also increase in blade size. To optimise power generation blades should be lightweight and stiff. Until now, there wasn’t a good solution to this. HighFlow Carbon solves this problem. By increasing the number of unidirectional fabric layers up to 165 we are able to help the customer to reach a new level of thickness on spar cap laminates. The fabric was unidirectional carbon fibre 600g/m2,” added Mr. Helynranta.

First scalable graphene yarns for wearable textiles produced

A team of researchers from The University of Manchester have developed a method to produce scalable graphene-based yarn. Multi-functional wearable e-textiles have been a focus of much attention due to their great potential for healthcare, sportswear, fitness and aerospace applications. Graphene has been considered a potentially good material for these types of applications due to its high conductivity, and flexibility. Every atom in graphene is exposed to its environment allowing it to sense changes in its surroundings, making it an ideal material for sensors.

Smart wearable textiles have experienced a renaissance in recent years through the innovation and miniaturization and wireless revolution. There has been an effort to integrate textile-based sensors into garments, however current manufacturing processes are complex and time consuming, expensive, and the materials used are non-biodegradable and use unstable metallic conductive materials.

The process developed by the team based at the National Graphene Institute has the potential produce tonnes of conductive graphene-based yarn,
using existing textile machineries and without adding to production costs. In addition to producing the yarn in large quantities, they are washable, flexible, inexpensive and biodegradable. Such sensors could be integrated to either a self-powered RFID or low-powered Bluetooth to send data wirelessly to mobile device.

One hindrance to the advancement of wearable e-textiles has been the bulky components required to power them. Previously it has also been difficult to incorporate these components without compromising the properties or comfort of the material, which has seen the rise of personal smart devices such as fitness watches.

The lead author Dr. Shaila Afroj, who carried out the project during her PhD, said “To introduce a new exciting material such as graphene to a very traditional and well established textile industry, the greatest challenge is the scalability of the manufacturing process. Here we overcome this challenge by producing graphene materials and graphene-based textiles using a rapid and ultrafast production process. Our reported technology to produce thousand kilograms of graphene-based yarn in an hour is a significant breakthrough for the textile industry.”

Dr. Nazmul Karim, the other lead author and Knowledge Exchange Fellow (Graphene) from the National Graphene Institute said "High performance clothing is going through a transformation currently, thanks to recent innovations in textiles. There has been growing interests from the textile community into utilizing excellent and multifunctional properties of graphene for smart and functional clothing applications." "We believe our ultrafast production process for graphene-based textiles would be an important step towards realizing next generation high performance clothing.”


**New PPS Resin of Highest Flexibility Level**

Toray Industries has succeeded in developing a new Polyphenylene sulfide (PPS) resin with world’s highest flexibility level while maintaining its superior heat and chemical resistance. The company plans to start proposing applications of the new resin for automobiles in April and will pursue expansion of its application into various industrial material fields.

The new PPS resin material was developed by evolving the two core technologies of polymer chemistry and nanotechnology. Toray will widely propose the resin as a material that give ‘a net zero emissions world’, where greenhouse gas emissions are completely offset by absorption, which the Toray Group aims for, through energy saving from weight reduction.

PPS resin is a super engineering plastic with well-balanced superior heat resistance and chemical resistance properties, and its sales are growing at an annual pace of about 7 per cent. It is widely used primarily in automobile applications, which requires heat resistance, light weight and high strength to replace metals, and PPS resin containing elastomer is used in applications that require flexibility such as washers and automobile piping. However, there was a limit to adding flexibility to PPS resin while maintaining heat resistance and chemical resistance and the development of PPS resin with high flexibility had been a challenge over many years.

Toray succeeded in the development of the novel PPS resin, with the world’s highest flexibility level of 1,200 MPa or less in elastic modulus, by optimising the polymer structure using its innovative material design based on a technology database accumulated in research and development over many years and the alloy precise control technology based on its proprietary nanoalloy technology. Mechanical strength of the new PPS resin does not deteriorate even after 1,000 hours of treatment at 170 °C and it
Scientists from KAIST based in Korea have developed a textile-based display technology that is washable and does not require an external power source, paving the way for smart clothes. When we think about clothes, they are usually formed with textiles and have to be both wearable and washable for daily use. However, smart clothing has had a problem with its power sources and moisture permeability, which causes the devices to malfunction.

To ease out the problem of external power sources and enhance the practicability of wearable displays, Professor Kyung Cheol Choi from the Korea Advanced Institute of Science & Technology (KAIST) fabricated their wearing display modules on real textiles that integrated polymer solar cells (PSCs) with organic light emitting diodes (OLEDs).

PSCs have been one of the most promising candidates for a next-generation power source, especially for wearable and optoelectronic applications because they can provide stable power without an external power source, while OLEDs can be driven with milliwatts. However, the problem was that they are both very vulnerable to external moisture and oxygen. The encapsulation barrier is essential for their reliability. The conventional encapsulation barrier is sufficient for normal environments. However, it loses its characteristics in aqueous environments, such as water. It limits the commercialization of wearing displays that must operate even on rainy days or after washing.

To tackle this issue, the team employed a washable encapsulation barrier that can protect the device without losing its characteristics after washing through atomic layer deposition (ALD) and spin coating. With this encapsulation technology, the team confirmed that textile-based wearing display modules including PSCs, OLEDs, and the proposed encapsulation barrier exhibited little change in characteristics even after 20 washings with 10-minute cycles. Moreover, the encapsulated device operated stably with a low curvature radius of three millimetre and boasted high reliability. Finally, it has also been confirmed to have high resistance to acids and vehicle coolants, which is required in actual operating environment.

The newly developed PPS resin is expected to enable the use of resin for automobile piping, which has not been possible until now, reduction in the number of parts used and simplification of process. Toray has already begun recommending the material for automobile piping and is preparing for a production system for the resin towards full-scale promotion of the material.

exhibited no deterioration in properties over 30 days even after being subjected to both bending stress and washing.

Since it uses a less stressful textile, compared to conventional wearable electronic devices that use traditional plastic substrates, this technology can accelerate the commercialization of wearing electronic devices. Importantly, this wearable electronic device in daily life can save energy through a self-powered system.


SAERTEX collaborating with Scott Bader for fire protection material system

SAERTEX, Germany has announced a strategic partnership with resins, gelcoats, adhesives and specialty polymers manufacturer Scott Bader, UK for the production and distribution of the SAERTEX LEO system- fire protection line of materials combining multiaxial non-crimp fabrics and a specifically designed resin system.

The agreement aims at combining the performance capabilities of the two companies for applications that meet the highest fire protection requirements and further developing the LEO system. The SAERTEX LEO system is said to provide the highest level of fire protection and consists of multiaxial noncrimp fabrics and core materials as well as a specifically designed resin system (not filled and halogen-free) and an easy-to-process gelcoat for fulfilling fire protection requirements such as EN 45545 in the field of rail vehicles, EN13501 in the field of construction or the IMO FTP Codes in the field of shipbuilding.

"All materials used within the LEO system are perfectly matched to one another to provide our customers with a reliable solution which meets the highest fire protection requirements," says Mr. Steven Bakker, Director Industry & Advanced Technologies at SAERTEX.

"The SAERTEX LEO system is a unique material system which combines excellent fire protection with the highest mechanical strength for the production of structural fiber composite components," adds Mr. Neil Gray, Global market manager FST at Scott Bader. "Our new LEO Crestapol 1261PA resin for the LEO system fulfills all previous functionality requirements and even improves the mechanical properties for structural components."

The fiber-reinforced composite materials with integrated fire protection from the SAERTEX LEO SYSTEM are used in the marine market, in the construction industry and in the production of rail vehicles; all of these are areas in which the combination of lightweight design, mechanical durability and good weather resistance is in demand.

MINIPACK, THANEE
MINIPACK is the leading manufacturers of complete range of Shrink & Stretch Wrapping Machine Manufacture. They are India's first ISO certified SHRINK & STRETCH WRAPPING MACHINE MANUFACTURE and all systems are CE certified. The machine being offered included- High Speed online auto collating system, fully automatic wrapping machine for sleeve wrapped (2 bulls eyes openings at the side), Different types and size of shrink tunnels compatible in all respects to pack and product requirement, etc.

GTEX FABRICS PVT. LTD., AHMEDABAD
GTEX Fabrics are manufacturer of PU/PVC coated fabrics which is widely used in Home Furnishings Upholstery, Home Decorations Accessories, Purses & wallets, cushion covers, curtains, Rugs, car Seat, Sofa fabrics, Auditorium & Cinema Seats, Baby Car Seats cover, Automotive Decorations. They have PU-PVC Rotocoat four head coating line, 3 colour Rotogravure printing, Embossing, Circular terry knitting and Warp knitting.

DUCIT MATERIALS LLP, MUMBAI
Ducit Materials is the Technical Textiles Division of the “Patodia Group”. We are currently selling Technical Yarns and Air Filter based products. We are looking to expand into multiple lines as we grow in the future.

AYM SYNTEX LIMITED, MUMBAI
AYM Syntex was formerly known as Welspun Syntex Limited. It is a leading specialty yarn manufacturer with world-class manufacturing technology for multipolymer products. They manufactures and sells synthetic yarns in India and offer bulk continuous filament (BCF) yarns, such as air twisted, power heat set/superb heat set, cabled/twisted and air entangled yarns as well as BCF singles and conventional dyed and textile yarns including partially oriented, fully drawn, draw textured, highly oriented, mono, FDY and air textured yarns.

DSS TEXTILES, AHMEDABAD
DSS Textiles represents PTMT SRL of Italy, a Rapier loom Manufacturer supplying specialized Looms for Woven Technical Textiles up to 620 cm Reedspace in width such as Looms for Scrim Weaving using Polyester and Fiber Glass Zero Twist Yarns, Woven Geotextiles up to 1000 KN x 1000 KN in widths up to 600 cm, Geotubes using Flat Fibrillated Tape Yarns up to 600 cm in width, Filtration Fabrics using Monofilaments, Spun yarns, Tape Yarns, etc., Protective Fabrics using Fiberglass, Basalt, UHMPE flat tapes, Aramids, Carbon etc.
UPCOMING EVENTS

MARCH 2019
Safety ++ - India’s Leading Network of Summits on Industrials Safety Health & Environment
22nd March, 2019 NCR, Gurgaon
Web: www.safetyplusplus.com

IDEA 2019
25-28 March, 2019 at Miami Beach Convention Center, Miami Beach, Florida
Web: www.idea2019.com

IDEA 2019
25-28 March, 2019 at Miami Beach Convention Center, Miami Beach, Florida
Web: www.idea2019.com

APRIL 2019
National Investors’ Conclave on Technical Textiles (NICTT 2019)
24th April, 2019 at The Residency Towers, Coimbatore
Web: www.ittaindia.org
(Organized by ITTA jointly with ITF & SIMA)

FILTREX™ India 2019
09-10 April, 2019 at New Delhi, India
Web: www.edana.org

OSH Bangladesh
18–20 April, 2019 at ICCB, Dhaka, Bangladesh
Web: www.oshindia.com

FIRE AND SAFETY INDIA 2019
25-27 April, 2019 at Bombay Exhibition Centre, Mumbai
Web: https://firesafetyexpo.in

MAY 2019
Techtextil Frankfurt 2019
14-17 May, 2019 in Frankfurt, Germany
Web: https://techtextil.messefrankfurt.com/frankfurt/en.html

Smart Fabrics Virtual Summit
14-15 May, 2019 in USA
Web: https://smartfabricssummit.com

JUNE 2019
China International Nonwovens Expo & Forum (CINE)
3-5 June, 2019 Shanghai Convention & Exhibition Center of International Sourcing, China
Web: www.cine-shanghai.com

IMPERVIUS 2019 – The Bitumen Waterproofing Conference 5 & 6 June 2019 at Grand Hotel Dino, Baveno, Italy
Web: www.edana.org

Non Woven Tech Asia 2019
6-8 June 2019 at Pragati Maidan, Delhi, India
Web: www.nonwoventechasia.com

International Nonwovens Symposium
12-13 June 2019 in Vienna
Web: www.edana.org

ITMA 2019- International Textile and Garment Technology Exhibition
20-26 June, 2019 at Barcelona, Spain
Web: www.itma.com

JULY 2019
TEXWORLD USA
22-24 July 2019 at Javits Center, New York, USA
Web: https://texworld-usa.us.messefrankfurt.com

AUGUST 2019
Gartex India 2019 - Garment & Textile Industry Exhibition
10-12 August 2019 at Pragati Maidan, Delhi, India
Web: www.gartexindia.com

Source India/Reverse Buyers Sellers Meet
21-23 August 2019 at Mumbai
Web: www.srtepc.org

Technotex 2019
29-31 August 2019 at Bombay Exhibition Centre, Goregaon, Mumbai
Web: www.technotexindia.in

Sport India 2019- 7th India International Sporting Goods Show
29-31 August 2019 at Pragati Maidan, Delhi, India
Web: www.iisgs.com

OCTOBER 2019
IFAI Expo 2019
1-4 October, 2019 in Orlando, Florida
Web: www.ifai.com

OUTLOOK™ 2019
9-11 October, 2019 at InterContinental Athenaeum Hotel, Athens, Greece
Web: www.edana.org

NOVEMBER 2019
Techtextil India 2019
20-22 November, 2019 at Bombay Exhibition Centre, Goregaon, Mumbai
Web: https://techtextil-india.in.messefrankfurt.com

8th OSH India (Mumbai) 2019
28-29 November 2019 at Bombay Exhibition Centre, Goregaon, Mumbai
Web: www.oshindia.com

MARCH 2020
Geosynthetics Conference 2020: Case Studies
8-10 March 2020 at Charleston, SC USA
Web: www.ifai.com