

## ***“NATIONAL INVESTORS’ CONCLAVE ON TECHNICAL TEXTILES (NICTT 2019)”***

**24<sup>th</sup> April 2019 | The Residency Towers, Coimbatore, India**

The Indian Technical Textile Association (ITTA) jointly with Indian Texpreneurs Federation (ITF) & The Southern India Mills' Association (SIMA) organized the First Edition of ***“National Investors’ Conclave on Technical Textiles (NICTT 2019)”*** on 24<sup>th</sup> April, 2019 at The Residency Towers, Coimbatore, India. The event has been organized for the first time in Coimbatore to promote, expand & diversify new Investments in Technical Textile Industry by Entrepreneurs across the country. This was the right forum for First-time Entrepreneurs to know the evaluation of business scope, identify right products, market potential, investment quantum, etc.

The conclave was inaugurated by the Chief Guest, Shri. Raghavendra Singh, IAS, Secretary Textiles, MOT with the Guest of Honor, Shri. Ajay Kumar Singh, DG Life Sciences- DRDO. Shri. P. Nataraj, SIMA Chairman, Dr. Sundararaman K. S., Chairman, ITTA and Shri. Prabhu Damodaran, Convenor, ITF also graced the inaugural session.

Speaking on the event, Shri. Raghavendra Singh, IAS, Secretary Textiles said that while the growth of technical textiles sector is spoken of enthusiastically and has been projected at 2 lakh crore by 2021. The industry and research institutes should come together to realize the sector’s full potential and asked industrialists to identify prototypes developed by COEsto adapt them to the industry. He also emphasized that the Govt. has classified 207 products as technical textiles for import and export, which will be expanded based on representations from stakeholders. He pointed out that two of the ten COEs are established in Coimbatore - PSG College and SITRA. Baseline surveys of the textile sector will reflect the real needs of the industry and the industry should help in the conduct of such surveys, he said. Over the past seven to eight months, he said that they had consulted various ministries in the Union govt. and State govt. and have come up with 106 textile products, for which standards already existed. “These belong to various sectors such as railways, home affairs, defence, shipping, agriculture and transport. We need to work on

these with BIS, as we have the standards and have a procedure which could be made mandatory with these ministries for their tenderization process,” he said.

He launched the ITTA video in the presence of all the delegates which contains the new concepts and technologies used in Technical Textiles for different products used in different sectors i.e. railways, defence, construction, medical, filtration, etc.

According to Shri. Ajay Kumar Singh, Director-General of Life Sciences, DRDO, in the Tejas light combat aircraft, the pilot’s clothing and gear were developed indigenously and only 10% of it was imported. A study shows that per capita non-woven consumption in India is 0.4 kg and it is 3.0 kgs in the U.S. By 2049, it is expected to be 25 kg in the U.S. and 20 kg in India. So, there is opportunity and “We can have phenomenal growth.” The need is for research and development. There is scope for development of fire-retardant clothing. The raw material for it has to be imported for the clothing to be developed locally now. Another area of potential is insecticide textiles and mats. This will benefit several applications,” he said. He urged the stakeholders to form a “mahagathbandhan” for the progress of the sector.

Mr. P. Nataraj, SIMA Chairman, in his welcome address mentioned about the growing market opportunities of technical textile, the sunrise sector and urged textile entrepreneurs to focus on making more value added products like technical textiles.

Dr. Sundararaman K. S., Chairman, ITTA briefed about the theme of the conclave to the gathering. He said, “In the previously done programs we have connected with the people who are already in the area. We wish to connect with those who are volunteering to invest in Technical Textiles. We want to see more new entrepreneurs coming into the field of Technical Textiles. The Indian Supply base has to grow tenfold to make some meaningful impact in the international arena”.

Mr. Prabhu Damodaran, Convenor ITF said, "Our region is dynamic and the entrepreneurs here have been at the forefront of many new approaches and business opportunities. I am confident that this program will go a long way in motivating South Indian firms to venture into Technical Textiles. Being an event with a practical approach, entrepreneurs get first-hand information about the industry and its potential."

***ITTA signed Memorandum of Understanding (MOU) with NISSENKEN, JAPAN to promote Technical Textiles in India.***

During the event, Indian Technical Textile Association (ITTA) has forged Memorandum of Understanding (MOU) with Nissenken, Japan to promote Technical Textiles in India and Japan. The Chairman ITTA - Dr. Sundararaman K. S. signed this MoU with Mr. Nobuhiro Komada-Chairman of Nissenken Quality Evaluation Centre (NQEC). This relationship will benefit ITTA Member companies to develop & promote technical textiles in Japan.

***Technical Sessions -***

Eminent Speakers were from various Govt. R&D organizations, COEs, DRDO & Technical textile Industry and also includes international speakers from Nissenken, Japan & Messe Frankfurt who shared their rich experience and provide practical views on desirable projects, their market potential and how to actually launch such ventures. This direct attempt is one of a kind in the country.

***The Second Technical Session was chaired by Dr. Sundararaman K. S., Chairman ITTA. The following presentations were made during this session.***

This session witnessed the excellent presentations by the speakers from India and abroad. They include Mrs. T. Rajeswari, Additional Secretary, Ministry of Water Resources, Delhi, Mr. Devakanta Pahad Singh, Director PM & SQR (LS), DRDO and Mr. Ken Ando & Ms. Alexia Whitfield, Nissenken, Tokyo Lab, Japan.

Mrs. T. Rajeswari spoke about the “*Usage of Technical Textiles in different depts. in Ministry of Water Resources*”. She highlighted that technical textiles have provided innovative engineering solutions for several applications in civil and geotechnical engineering, for water infrastructure water resources projects. The technical textile products which are used in water resources works are geobags, geotubes, geomembranes and geo-containers. She also announced that Ministry of Water Resources (MoWR), Govt. of India is organizing the One day Seminar on “Use of Technical Textiles in Water Resources Works” on 29<sup>th</sup> April 2019 at R. K. Puram, New Delhi. ITTA is supporting the event.

Mr. Devakanta Pahad Singh presented the topic on “*Technical Textiles for the Armed Forces*”. He spoke about the DRDO Technology Spectrum such as Armament & Combat Engineering, Missiles & Strategic Systems, Aeronautical Systems, Electronics & Communication Systems, Microelectronics & Computational Systems, Naval & Material Systems and Life Sciences. Life Sciences department research on CBRN Defence, Life Support, Operation support and Civil Military Interface. The requirements of technical textiles in defence are Physical requirements- light weight, low bulk, anti-static, etc., Environmental requirement- water repellent/proof, UV resistant, etc., Camouflage, Concealment and Deception- Visual spectrum, Ultraviolet, etc., Flame, Heat and Flash Protection- Flame retardance, Heat resistant, etc., Battlefield Hazards- Chemical and Bio agents, Nuclear radiation, etc. and Economic Considerations- Minimal maintenance, Long Storage life, etc. He emphasized that DRDO & ACADEMIA can collaborate on CARS (Contract for Acquisition of Research Services), ER (Extramural Research), Research Boards and DRDO Centers located in Universities and DRDO & INDUSTRY can collaborate on Contracted Development, Joint development, Trial supply order and Technology Transfer (ToT).

“*Japanese Innovations in Functional Textiles & Corresponding Opportunities in India and Japan*” was presented by Mr. Ken Ando & Ms. Alexia Whitfield. He talked about the Nissenken Quality Evaluation Center, Japan and its works in the field of Technical Textiles. The various Functionality Finishes are UV cut finishes, Water-repellent finishes, Water-absorbing quick drying finishes, Thermal barrier finishes, Soil resistance finishes, Anti-Virus finishes, Retro reflective Material, Anti-Mosquito finishes, Anti-allergen finishes and Cool feeling finishes. He explained about the different opportunities where India and Japan can work together mainly to promote technical textiles.

***The Third Technical Session was chaired by Mr. Durai Palanisami, Director, Pallava Group, Board Member-ITF and three papers were presented.***

This session includes the presentations from Dr. Padma Vankar, Research Advisor, BTRA, Mr. Naman Barot, Scientific Officer, ATIRA and Mr. Rajeev Kumar Saxena, Sr. Technology Manager (Weaving), Lohia Corp Ltd.

*“Polymeric pressure sensor for smart textiles & Nanofiber application to improve anti-clogging property of Geotextiles”* was presented by Dr. Padma Vankar.

- a) She explained about the development of Polymeric Piezo-electric Sensor for Smart Wearable Textile. A piezoelectric sensor uses piezoelectric effect to measure pressure, acceleration, temperature & strain wherein there are 2 types of piezoelectric effect i.e. direct piezoelectric effect- converts mechanical energy to electrical energy (generator & sensor effect) & indirect piezoelectric effect- converts electrical energy to mechanical energy (Actuator effect). Piezoelectric Materials are Ceramic base (ZnO, PZT, BZT ) and Polymer base (PA6, PVC, PVDF, PVDF-trFE). She suggested following points - 16% increase in crystallinity by addition of ZnO nanowires, 30% increase in  $\beta$  crystallinity compared to control PVDF, 22% increase in voltage compared to control PVDF, Change in signal possible by minimum pressure, Product can be woven or knitted directly with the other filaments, Little cost addition to the existing product and Scalability is very easy, no need of any additional process.
- b) She talked about the Nanofiber coated prefabricated vertical drainage (PVD) membrane with improved anti-clogging property. She explained about advantages of Nanofiber Media over Microfiber, features of Nanofiber, Nanofiber Spinning Process, Electrospinning of PA6, Cross Section of The Product, Soil Particle Size before & after Filtration Using Microfiber Membrane, etc. She concluded with the following points- Fibre diameter could be reduced to get pore size less than soil particle size, Water permeability was found more for long duration in nanofiber media compared to existing media in presence of soil, Cross section of the exposed nanofiber loaded sample found clean and Nanofiber deposited media will help to reduce the consolidation time significantly.

Mr. Naman Barot presented the topic on *“Antibacterial & pollution face mask & Portable water filter bottle”*.

- a) He said that India pollution mask market is projected to grow at more than 18% by 2023 across the urban areas. He pointed out that ATIRA procured a Nanospider Electrospinning Pilot Plant from Elmarco, Czech Republic and Nanofiber Production Pilot Plant Set up consists of Ultrasonic Cleaning Machine, Acid Fumes Scrubber, Electrospinning Pilot Plant, Polymer Station, Dehumidifier and Facemask Converting

Automatic Machine. Flow Chart Of Production Plan -Nano fiber Pilot Plant (Nano Fiber Coated Media), Ultrasonic Stitching (Facemask production) and Packaging (Ready for Use). He explained in detail about the Testing of facemask media, property, Material consumption, Cost of Facemask Media, Cost of project-Capex and Major Key player in India for Facemask Market.

- b) He pointed out that the Development of nanofibers based filter media which gives water completely free from muddy particles and micro-organisms and to make and deliver a simple portable filtration device are the objective of the paper. The nanofibers based filtration membrane device is prepared by perforated tube, coated fabric wrapping on tube, filtration candle and filtration device with filter candle. Its characterizations are UV-Visible (UV-Vis), X-ray Powder diffractometer (XRD), Field emission scanning electron microscope (FE-SEM), Energy Dispersive X-Ray Spectroscopy (EDS), Microbial assay of filtered water performed by pour plate method, PALAS2010 and Turbidity meter. He mentioned the Cost of Water Filtration Bottle, Water Filter Bottle In Market (Using Conventional Microfiber Filtration Method), Material consumption and Cost of project Capex.

Mr. Rajeev Kumar Saxena presented the topic on “*Opportunities for weaving Geo-textile fabrics on Circular loom*”. He said that Synthetic geotextile is the fastest-growing material type segment of the geotextile market. Polypropylene is the major material in demand, he claimed. Polypropylene woven Geotextile is in increasing demand in the Construction Industry and for safe & long lasting road construction. Asia-Pacific region represented the largest market for global geotextile market. The market for geotextiles in this region is mainly driven by the ongoing developments in construction industry. He also talked about the different products such as Geotextile Filter Fabric, PP Ground cover woven fabric, Weed control mats, On roof garden & terrace as drain & filter and HDPE Pond Liners. He explained about the development of bigger Circular looms (to produce max. flat fabric up to approx. 6.0m width) of high performance & quality and its advantages.

*The Fourth Technical Session was chaired by Mr. Prabhu Damodaran, Convenor, ITF. The following presentations were made during this session.*

This session has presentations by the speakers from India and abroad. They include Mr. Hemant Dantkale, Partner, DN associates, Mr. P. K. Choudhury, Principal Technologist, National Jute Board, Kolkata and Ms. Jesica John, Manager -Techtextil India, Messe Frankfurt India Ltd.

Mr. Hemant Dantkale presented on “Airly nonwoven products for automotive and building insulation”. He spoke about the Recycling and Nonwovens Eco-friendly solutions for the Automotive Industry. He explained in detail about the industrial textile waste, hard waste recycling, post consumer waste recycling and its nonwoven quality. Different nonwovens solutions for Automotive are blending lines for fibers and polymers, Airly Flexiloft, Airly Flexiloft +, Airfelt with Resin Felt Option and Airfelt. Above solutions are used for different applications in automotive sector.

“Various types of Jute Geotextile (JGT) like woven, nonwoven, open weave” was presented by Mr. P. K. Choudhury. He highlighted global demand of technical textiles by application wherein TT represents about 31% of the total Textile Production. It is forecasted that in 2022 the market demand will be 35.5 million ton with CAGR of 3.7 %. He talked about the Jute Geotextiles (JGT) viz. woven, nonwoven, open weave etc. used in various civil engineering applications with success, machineries used to manufactures, its advantages. There are many Union States who have used JGT with success in Andhra Pradesh, Gujarat, Tamil Nadu, Manipur, Himachal Pradesh, etc. Some of the case studies where JGT are used: - Kakinada Port- Andhra Pradesh, Andulia-Boyratala Road- West Bengal, Agartala-Mohanpur-Chebri Road at Tripura, etc. He discussed about different application of JGT i.e. Slope Management, Protection of River Banks, Strengthening of Road Sub- Grade, Stability of Embankment, Prevention of Railway Track Subsidence and Consolidation of Soft Soil.

Ms. Jesica John talked about the “Overview of the Techtextil-2019 on Technical Textiles”. She spoke about the overview of the Messe Frankfurt - Techtextil event worldwide. She also said Messe Frankfurt is organizing the Techtextil India 2019 on 20<sup>th</sup> - 22<sup>nd</sup> November 2019 in Mumbai focusing on the composites with different technical textile segments. Exclusive

programs of the event is direct buyer seller meeting, Product gallery zone, knowledge forum and direct market update. She also mentioned that ITTA is supporting the event.

*The Fifth Technical Session was chaired by Dr. Anup Rakshit, Executive Director, ITTA and three papers were presented.*

This session includes presentations from Dr. Prakash Vasudevan, Director, SITRA, Dr. Kuldip Kumar Sharma, Mentor, VFPL MEDEVICE and Mr. Andy Thayumanavan, GM, Reliance Inds. Ltd., Chennai.

*“Medical Textiles- Hernia Mesh, Vascular graft, Nano-finish surgical gown fabric, Barbed suture”* was presented by Dr. Prakash Vasudevan. He delivered lot of information on the products of Medical Textiles, new opportunities available for entrepreneurs. Challenges involved in the production of Medical textiles, Market Statistics to identify the scope for new ventures. He revealed in detail about the facilities and assistance provided by SITRA for entrepreneurs’ development in Medical Textiles. He presented high potential medical textile areas of - Hernia Mesh, Vascular graft, Nano-finish surgical gown fabric and Barbed suture.

Dr. Kuldip Kumar Sharma spoke on *“Innovation Meditech Products- Transfer Device & MAMMA POD”*. He highlighted that Innovations/patented devices developed Indigenously through the efforts of Government, Healthcare sector and research institutions under make-in India and start-up India initiatives of Govt. of India. Hospital acquired infections (HAIs) are a major cause of mortality and morbidity. Hospital acquired infections (HAIs) is a major safety concern for both health care providers and the patients. VPFL has developed Medical Devices/ Innovations such as Patient Transfer Device (PTD) (Transfer life) and Kangaroo Mother Care (Mamma Pod). The features of PTD are infection free, spill proof, no maintenance, no insertion and Nontoxic & Kangaroo Mother Care (Mamma Pod) are maintain warmth, safety & support early breast feeding for LBW, hands free mode to perform daily activities, early hospital discharge, pouch is flexible to accommodate the growth & weight of baby as it grows, etc. Other Innovations such as mattress protectors, soft and cozy baby care sheets, etc.

Mr. Andy Thayumanavan presented the topic on *“Polypropylene Nonwovens for Hygiene & Meditech”*. He pointed out the applications of nonwoven fabric and different fibres used in



Nonwoven where PP is the major Nonwoven fibre used globally. In India, major synthetic raw materials are Polypropylene (PP) - 58% & Polyester - 42%.He discussed in brief about the emerging application areas of PP Nonwoven i.e. Hygiene, Medical, Agrotextiles & Geotextiles, different nonwoven manufacturing processes and also said that Spunlaid technology to Gain Maximum Traction in the Near Future. The following conclusions and recommendations are suggested to use Nonwovens in Hygiene & Medical areas- Low Consumption, technology trends, Growing Economy, Rising Disposable Income, Govt. Initiatives/Awareness, Light Weight, Soft and Comfortable, Offers Safety Patient, Better Hygiene, Easy to Use and Dispose and no washing.

***The Panel discussion was on “Perspectives of entering Technical Textile Industry- from Inside and Outside”***

Mr. Amit Agarwal, Vice Chairman, ITTA was a Moderator and the experts Mr. Manoj Kumar Jhahharia, JMD, Salona Cotspin Ltd, Board Member-ITF, Mr. Mahesh Kudav, MD, Venus Safety, Director-ITTA, Mr. Pankaj Kapoor, MD, Park Nonwoven Pvt. Ltd., Director-ITTA and Mr. Gopinath Bala, CEO-SVS-SAF, Board Member-ITF were the panelists.

You may see that in this panel discussions were a combination of experts who are already in the technical textile industry and others are from outside the technical textile industry. Mr. Kapoor and Mr. Kudav shared their valuable experience of more than 10-15 years’ journey of entering the industry. Mr. Gopinath Bala who has recently entered into the technical textile manufacturing also shares his success story. On the other hand Mr. Jhahharia who is in cotton textiles now, is also of the opinion that conventional textile business houses can enter this field.

The conclave received over whelming response and attended by more than 200 delegates from the technical textile Industry, potential new Investors, Manufacturers who want to diversify, Start-Ups and Agents/ Dealers/ Distributors of Technical Textiles.