



# SETTING NEW STANDARDS FOR THE INDUSTRY



*Innovations and ground-breaking inventions in the textile industry are nothing new. The global textile market actually thrives on such developments as they continue to provide new possibilities of better product, improved efficiencies and enhanced productivity—all driven by the cause of sustainability. The application of new technologies and ideas help the entire value chain in the industry resulting in satisfaction of customers and end-users of textile products. The industry which faced tough times during the last two years is not only reviving at an astonishing pace but also showing sparks of buoyancy owing to even faster growing support of advancing technologies. Though there are many companies which have effectively utilised the opportunities offered by technology developments, this feature prominently talks of six companies which innovated some remarkable products and strategies to set new standards for the industry to emulate.*

by **SANJAY BAKSHI**



ADVANSIA is a leading European fibre producer based in Germany, supplying customers worldwide through a network of logistic centres and representative offices. The company is recognised for its wide portfolio of high tech and branded fibres made of diverse polymers.



RECYCLEMAN | SHUTTERSTOCK.COM

**ADVANSIA**

ADVANSIA has a rich history in developing industrial innovations that facilitate continuous improvement of processes and products. In collaborative R&D activities with operational teams, institutes and universities, it develops and tests a steady stream of innovative and profitable products. The company is focused on development and eco-responsible production of a broad range of specialised technical fibres including short cut fibres for paper and wet laid processes.

In August last year, the company launched ADVA terra – a biodegradable polyester fibre made of 100 per cent recycled feedstock. The ability of polyester to be degraded by microorganisms in biologically active environments helps to reduce the pollution potential of articles containing plastic. ADVA terra fibres originating from 100 per cent post-consumer PET bottles are engineered via proprietary modifications to provide biodegradable capabilities without sacrificing the favourable mechanical properties of PET. The product is available as water dispersible short cut fibre for the paper and wet laid nonwoven industry as well as staple fibre for dry laid nonwovens and tow for the floc industry in various finesses and cut length combinations. This makes it apt for using in production across diverse end-use applications including applications with food contact. The products made from ADVA terra have the same properties as conventional non-biodegradable standard fibres and can be processed just as easily, minimising environmental consequences without sacrificing quality and performance. Additionally, it is suitable for recycling after completing lifecycle which further improves the environmental impact by reduction of waste. Research shows that ADVA terra

is expected to biodegrade to 30-60 per cent within 12 months.

Another of ADVANSIA’s innovative products is ADVA Blue polyester fibres for the nonwovens industry which prevents plastic waste in the ocean. It is made from Social Plastic as a result of the partnership with the social enterprise Plastic Bank. ADVANSIA’s portfolio ‘Made with Social Plastic’ includes staple fibres, short cut fibres and tow which are well suited for various branches of industry such as hygiene and medicine, filtration, automotive, etc.



PLASTIC BANK

Grasim Industries, incorporated in 1947, is a flagship company of India's Aditya Birla Group. Started as a textiles manufacturer, today it is among the global producers of viscose staple fibre and filament yarn. It is also the largest chlor-alkali, advanced material, linen yarn and fabrics producer in India.



BIRLA CELLULOSE

## GRASIM

In March this year, the Swedish textile-to-textile recycling innovator Renewcell signed a letter of intent (LoI) with Birla Cellulose, the pulp and fibre business of Grasim Industries, concerning a long-term commercial collaboration for man-made cellulosic fibre production. The agreement allows the two companies to work together to supply high quality Liva Reviva textile fibres made using Circulose – Renewcell's 100 per cent recycled textile raw material, to global fashion brands and textile industry in the coming years. The ambition is to use 30,000 tonnes of Circulose per year. The LoI signed between both companies provides the framework for an upcoming offtake agreement between the parties. The future offtake agreement will set out commercial terms for the delivery of certain volumes of Circulose dissolving pulp to Birla Cellulose over a number of years. Birla Cellulose intends to use Circulose as one of the feedstocks in the production of man-made cellulosic fibres under the brand Liva Reviva. In order to strengthen brand Liva's delivery, on June 6 this year Birla Cellulose opened a state-of-the-art Liva Accredited Partner Forum (LAPF) studio in Surat (India) to cater to the growing demand of textile and clothing.

Further, the company looks forward to collaborating with innovators with an aim to scale up the circular fibres production to 100,000 tonnes per annum by 2024.



RENEWCELL | CIRCULOSE



LAPF STUDIO



Founded in 1966, Hyosung Corporation is a South Korean business conglomerate which has diversified business interests encompassing textile/trading, power & industrial systems/ construction, industrial materials, chemistry and information & communication. The group's textile/trading business - Hyosung TNC, is headquartered in Seoul.



HYOSUNG

## HYOSUNG

Hyosung TNC is a fibre manufacturer which produces world-class products such as Creora (spandex brand), Aerocol and Askin, besides producing and supplying nylon, polyester yarn, textiles, and dyed, processed fabric products. Creora is consumed by globally renowned brands in market segments such as lingerie, swimming suits and stockings.

Hyosung TNC launched T-shirts and socks of Musinsa standards made of Regen (the eco-friendly recycled fibre) on the occasion of Earth Day (April 22). This item has been launched as a modern basic casual wear brand for the first time in Green Line i.e., the first eco-friendly apparel series of Musinsa standards. This is the outcome of an MoU signed last January between Hyosung TNC and Musinsa for the joint development of eco-friendly apparel. The T-shirts and socks launched this time feature popular design, diverse colours, eco-friendliness, and reasonable prices. Consumers, especially who have had difficulty accessing eco-friendly fashion goods, are expected to be attracted easily to these items popularising the trend of eco-friendly fashion. The company intends to work with many fashion brands and local governments to make Regen known more widely. Going forward, Hyosung TNC plans to introduce many Regen products, aiming for the winter season in cooperation with Musinsa.

Subsequently on May 27, Hyosung TNC introduced the eco-cooler bags made by Hyundai Department



HYOSUNG

Store, again using Regen. Hyundai Department Store selected Regen for the premium daybreak delivery service provided by its 'To Home' mall where eco-cooler bags are to be used. Consumers can now purchase these cooler bags made with Regen while ordering food. The bags can be used several times. This is an example of applying eco-friendly fibre goods in people's daily lives beyond fashion goods. In future too, the company plans to work with many other brands as part of its effort to keep up with the eco-friendly trend.

Headquartered in Wichita, Kansas, US, Invista is a fibre, resin and intermediates company. It has been a subsidiary of Koch Industries since 2004.



INVISTA

## INVISTA

Though Invista makes chemical ingredients including adiponitrile (ADN), hexamethylene diamine (HMD), adipic acid (AA) and polymer-grade propylene (PGP), its strength lies in production of nylon intermediates and polymer resins that go into a diverse range of products such as heat-resistant plastics that can replace steel components in modern vehicles, electronics and electrical connectors. Its products portfolio consists of Antron fibre, Cordura Advanced fabrics, Dacron fibrefill, DBE esters, DYTEK specialty intermediates, nylon polymer and polypropylene. Aided by its years of experience in the polymerisation of polypropylene, Invista can produce over 100 grades of this lightweight thermoplastic for a wide range of applications and end-use. Invista's COOLMAX EcoMade socks, made in part with fibre containing 97 per cent recycled resources such as plastic water bottles, have expanded into the legwear and activewear markets.

In June last year, Invista Nylon Chemicals (China) Co established its new Asia Innovation Center in Shanghai with an investment of more than 95 million RMB (\$15 million). As its first R&D centre for nylon 66 application development in Asia, the project marks the company's milestone in growing the nylon 66 value chain in China. The 2,500 sq metre lab is equipped with state-of-the-art polymer research and development equipment necessary for polymer application development and customer support for product trials. Additionally, it includes polymer compounding extrusion and injection moulding



INVISTA

capability, and analytical and mechanical test equipment to characterise polymer resin properties. The Asian Innovation Centre focuses on the application needs in engineering polymers for key industries such as automobile and electrical & electronics.

Later, on December 30, 2021, Invista Textiles (UK) Ltd and China Resources Yantai Nylon Co Ltd – a subsidiary of China Resources Holdings, signed an agreement for the licensing of Invista's nylon 66 polymerisation technology. This is expected to promote the development of nylon 66 industry in China to meet growing local demand with enhanced capacity and premium downstream applications. Located in the Economy & Technology Developing Zone in Yantai city of Shandong province, the new line will use Invista's patented nylon 66 salt process and advanced continuous polymerisation technology that offers safety and environmental performance, high reliability and run life, higher energy savings, lower operating costs and excellent product quality for the nylon 66 industry.



Headquartered in Austria, the Lenzing Group is a powerful entity functioning for more than 75 years. The group supplies the global textile and nonwovens industry with high quality man-made cellulose fibres manufactured from sustainable sources such as wood and wood pulp. Its products portfolio ranges from dissolving pulp, standard and specialty cellulose fibres to engineering services.



TENCEL | TREE CLIMATE



LENZING | REFIBRA

### LENZING AG

Lenzing lays great emphasis on innovation. With a highly talented R&D team, it has been developing innovative fibres for various industries – apparel, home & interiors, technical textiles and nonwovens. In May this year, the group joined hands with Belgian company UTEXBEL, a vertically-integrated textile group and renowned name in the field of protective and workwear fabrics, to produce uniform for the security personnel of the Belgian Federal Public Service for justice (FPS justice) using TENCEL branded fibres with REFIBRA technology and recycled polyester. The collaboration will enable UTEXBEL to produce 80,000 TENCEL brand lyocell fibre shirts with REFIBRA technology. This is going to be the first time that TENCEL lyocell fibres with REFIBRA technology will be used to manufacture apparel for the public sector. Lenzing's REFIBRA technology recycles cotton waste from clothing production and combines it with pulp to create new TENCEL lyocell fibres. The fibres, so produced, are identifiable in yarns, fabrics and finished garments, thanks to Lenzing's innovative fibre

identification technology. The technology allows the fibres to be fully traced and certifies their origin, thus contributing to the transparency of the end-product supply chain.

Earlier in April, the group presented the TENCEL brand 'Tree Climate' fabric collection, curated by outdoor fabric experts David Parkes and Marco Weichert at the Performance Days in Munich. The collection, having versatility of the TENCEL branded lyocell fibres, included a large selection of fabrics with inherent functional properties for base, mid and outer layers as well as padding made of wood based TENCEL lyocell fibres for outdoor clothing. Thus, the collection covering three functional areas enables the production of both synthetic-free and optimised synthetic solutions for different weather conditions. According to Higgs Material Sustainability Index, the environmental impact of this fabric is among the lowest of any material. Additionally, it offers wind and water-repellent finishes with optimal breathability and heat regulation. The fibres are also soft on skin and mix well with natural fibres such as wool and hemp.

Headquartered in Shanghai, Sateri – part of Royal Golden Eagle Group, is the world’s largest producer of viscose fibre with five mills in China collectively producing about 1.8 million tonnes of fibre annually. The company’s sales, marketing and customer service network covers Asia, Europe and the Americas. Sateri’s viscose mill operations have achieved STeP and STANDARD 100 certifications by OEKO-TEX, and it is also the world’s first viscose company to carry the MADE IN GREEN product label. It has also completed EU-BAT, Higg FEM and FSLM assessment.



## SATERI

Sateri’s high quality viscose product branded as EcoCosy is a natural biodegradable raw material that is found in everyday items like textiles, wet wipes and other personal hygiene products. The company also produces textile yarn, spunlace nonwoven fabric lyocell and FINEX (short for Fiber Next), a recycled textile fibre. While EcoCosy is made from wood cellulose from sustainably managed plantations, FINEX is made from bio-based natural fibres derived from a mix of recycled pre- and post-consumer textile waste and other PEFC-certified wood pulp from renewable plantations. A natural and biodegradable fibre, Sateri’s lyocell is made from wood pulp sourced from certified and sustainable plantations. It is manufactured using closed-loop technology, requiring minimal chemical input during the production process, and utilising an organic solvent that can be almost fully (99.7 per cent) recovered and recycled. EcoCosy, certified by Seedling and the Biodegradable Products Institute (BPI) as compostable in industrial facilities, can degrade by more than 90 per cent within 90 days by test, effectively reducing the environmental impact of products after use.

In 2021, Sateri’s R&D expenditure exceeded RMB 600 million (around \$89 million). During the same year, the company filed 60 patent applications and received 41 patent grants which makes the company boast a total of 267 patent applications and 195 patent grants. Its functional products ‘icecream’ lyocell jeans and non-allergic face towel for babies and children were among the ‘2021 Top Ten Innovative Textile Products’ in



SATERI | ECOCOSY

October 2021 award ceremony for ‘Product Publication and Marketing’ and ‘Cultivation & Promotion of 2021 Top Ten Innovative Textile Products’ held in Shengze town of Jiangsu province.

Considering the needs of its customers and consumers in the product development process, the company has developed a variety of innovative products to meet their various needs. For example, EcoCosy Colour Viscose employs advanced pre-spinning injection and blending technology to evenly disperse high-quality colour paste into the fibre, providing a more uniform and lasting colour compared to ordinary dyeing. Since the COVID-19 pandemic led to a growing emphasis on the antibacterial property of fibres, Sateri has developed EcoCosy Antibacterial fibre with inhibitory effect on microorganisms such as bacteria and fungi. It protects textiles from microorganisms and reduces the possibility of cross-infection, thus protecting the health of users from infectious diseases. **FF**



SATERI