



WORLD SURVEY ON TEXTILES & NONWOVENS



		Page
l.	Foreword and Summary	9
1.1	Foreword	9
1.2	Executive Summary	13
1.3	List of Sources	15
1.4	Contributions from Industry Experts	16
2.	Summary	18
2.1	Textile Value Chain 2021 at a Glance	18
2.2	World Fiber and Spunlaid Market 2021	19
2.3	Revisions for 2020	20
2.4	Polyester Feedstocks	21
2.5	Manmade Fibers	22
2.6	Staple Fibers	24
2.7	Filament Yarns	25
2.8	Filament and Spun Yarns	26
2.9	Nonwovens	28
2.10	Textile and Apparel Trade	29
2.11	Fiber Supply 1900 - 2030	30 NEW
3.	Upstream Feedstock Industry	36
3.1	Cotton Cultivation	36
3.2	Sheep Farming	54
3.3	Dissolving Pulp 2005 - 2025	60
3.4	Petrochemicals	63
3.4.1	Paraxylene (PX) 2005 - 2025	65
3.4.2	Purified Therephthalic Acid (PTA) 2005 - 2025	67
3.4.3	Dimethyl Terephthalate (DMT) 2005 - 2025	69
3.4.4	Mono Ethylene Glycol (MEG) 2005 - 2025	70
3.4.5	Caprolactam (CPL) 2005 - 2025	72



		Pa
4.	Staple Fibers	73
4.1	World Staple Fibers	73
4.2	Natural Fibers	76
4.2.1	Cotton	77
4.2.2	Wool	83
4.2.3	Other Natural Fibers	87
4.3	Wood-based Cellulosic Fibers	91
4.3.1	Viscose Fibers	93
4.3.2	Modal Fibers	96
4.3.3	Lyocell Fibers	97
4.3.4	Textile Recycling Technologies	99
4.3.5	Acetate Tow	10
4.4	Biopolymers and Sustainability	10
4.4.1	Tailwind for Polylactic acid (PLA)	10
4.4.2	How the EU aims to transform its textile industries	110
4.5	Synthetic Staple Fibers	113
4.5.1	Polyester Staple Fibers	116
4.5.2	Polypropylene Staple Fibers	. 119
4.5.3	Acrylic Staple Fibers	. 12
4.5.4	Polyamide Staple Fibers	. 12
5.	Vauna	10
5. 5.1	Yarns	
5.1 5.2	Filament Yarn	
		. 124 126
5.2.1 5.2.2	Polyester Filament	
	•	
5.2.3	Polypropylene Filament	
5.2.4	Wood-based Cellulosic Filament	
5.3	Spun and Cotton Yarn	. 14
6.	Other Manmade Fibers	. 14
6.1	General Overview	14
6.2	Aramid Fibers	. 14
6.3	Carbon Fibers	. 14
6.4	Spandey Fibers	140



		Page
7 .	Nonwovens and Unspun Applications	154
7.1	General Overview	154
7.2	Major Investments	155
7.3	Polymer-based	164
7.4	Drylaid	171
7.5	Airlaid	174
7.6	Wetlaid	175
8.	Major Countries and Regions in Textiles and Clothing Business	179
8.1	Australia	183 <i>NEW</i>
8.2	Bangladesh	187
8.3	Brazil	197
8.4	Cambodia	202
8.5	PR China	208
8.6	European Union EU(27)	227
8.7	India	238
8.8	Indonesia	249
8.9	Japan	257
8.10	Korea	263
8.11	Malaysia	272
8.12	Mexico	279
8.13	Myanmar	286
8.14	Pakistan	290
8.15	Sri Lanka	298
8.16	Taiwan	303
8.17	Thailand	308
8.18	Turkey	315
8.19	United States	324
8 20	Vietnam	334



Stati	stical Appendix I.	Page	9
A .	Supply and Demand	2.42	
A.1	World Fiber Market: Supply	343	
A.2	World Fiber Volume Entering Processing Chain	344	
A.3	World Fiber Volume Entering Processing Chain in kg / head	345	
A.4	World Fiber Market (Classic View)		
A.5	Fiber Type Dynamics in Supply	347	
A.6	Natural and Manmade Fiber Processing Use	348	
A.7	Natural Fibers Production	349	
A.8	Natural Fibers Consumption	350	
A.9	Cotton Production and Use	351	
A.10	Production of Bast Fibers	352	NEW
A.11	Production of Other Natural Fibers	353	NEW
A.12	Staple Fibers Production	354	
A.13	Production of Manmade Fibers	355	
A.14	Production of Synthetic Fibers	356	
A.15	Production of Cellulosic Fibers	357	
A.16	Share of Major Fiber Types by Production	358	
A.17	Staple Fiber Competition by Production	359	
A.18	Main Staple Fiber Production	360	
A.19	Fiber Supply 1900 - 2030	361	NEW
В.	Manmade Fibers		
B.1	Production of Manmade Fibers by Major Country	. 362	
B.2	Production of Manmade Fibers by Material	. 363	
B.3	Top 3 Manmade Fiber Producing Countries	. 364	
B.4	Polyester Fiber Industry 2019/20	365	
B.5	Polyamide Filament Industry 2019/20	366	
B.6	Manmade Staple Fiber Industry 2019/20	367	
B.7	Filament Yarn Production		
B.8	Synthetic Staple Fiber Production	369	
В 9	Cellulosic Staple Fiber Production	370	



	Yarns and Fibers	
2.1	Global Yarn Production	•••••
2.2	Dynamics in Yarn Production	
2.3	History of Yarn Production	•••••
.4	Filament Yarn Production by End-Use	•••••
2.5	Top 10 Cotton Yarn Countries	
2.6	Top 10 Filament Yarn Countries	
2.7	Top 10 Staple Fiber Countries	
2.8	Top 10 Natural Staple Fiber Countries	
.9	Top 10 Manmade Staple Fiber Countries	
2.10	Top 10 Staple Fiber Trading Countries	•••••
2.11	Top 10 Yarn Trading Countries	
2.12	Top 10 Sewing Thread Trading Countries	
).).1	Textile and Clothing Trade	
. 1	Major Textile & Clothing Trading Countries - Americas	
` `	Major Toytilo & Clathing Trading Countries - European Union	
	Major Textile & Clothing Trading Countries - European Union	
0.3	Share of Non-EU Textile & Clothing Trade	
0.2 0.3 0.4	Share of Non-EU Textile & Clothing Trade	
0.3 0.4 0.5	Share of Non-EU Textile & Clothing Trade	
).3).4).5).6	Share of Non-EU Textile & Clothing Trade	
).3).4).5).6).7	Share of Non-EU Textile & Clothing Trade	
0.3 0.4 0.5 0.6 0.7	Share of Non-EU Textile & Clothing Trade	
).3).4).5).6	Share of Non-EU Textile & Clothing Trade	
0.3 0.4 0.5 0.6 0.7	Share of Non-EU Textile & Clothing Trade	
).3).4).5).6).7).8).9	Share of Non-EU Textile & Clothing Trade	
).3).4).5).6).7).8	Share of Non-EU Textile & Clothing Trade	
).3).4).5).6).7).8).9	Share of Non-EU Textile & Clothing Trade	



1. Foreword



Andreas Engelhardt
President
The Fiber Year GmbH
Roggwil, Switzerland
www.thefiberyear.com

About The Fiber Year

The Fiber Year GmbH, founded in 2010, aims to provide international expertise, analyses, strategy consulting and customized solutions to the international textile industry after 18 years in textile machinery manufacturing business with companies such as Barmag, Saurer Management and Oerlikon as senior manager for Oerlikon Textile International Business.

Numerous presentations at international conferences and publications prove the company's understanding of textile market forces. Corresponding views appeared in print media such as annabelle, AVR, Bio-based News, Bloomberg, Chemical Fibers International, China Textile Magazine, China Textile Leader, Der Spiegel, Der Standard, eco Institut, Frankfurter Allgemeine Zeitung, Fibre2Fashion, Finanz und Wirtschaft, Forward Textile Technology, ICAC Cotton Review Report, Indian Textile Journal, International Fiber Journal, Knitting Trade Journal, Kohan Journal, Melliand, Nonwovens Industry, Neue Zürcher Zeitung (NZZ), Oerlikon Fibers and Filaments, Schweizerische Umweltstiftung, Sustainable Nonwovens, Technical Textiles, Tecoya Trend, textile network, TEXTILplus, TextilWirtschaft, U.S. Congressional Research Service, WirtschaftsWoche, Zeit Online and others.

TFY2022 in its 22nd edition offers a comprehensive and continuously enriched range of information along the textile value chain.

Latest upgrading to emphasize global efforts for sustainability is the subdivision of the dynamic viscose staple fiber market into spinning processes. This report will for the first time ever differentiate into viscose process for standard and eco-friendly viscose, modified viscose process for modal fibers, lyocell technology and acetate process.

Further brilliant contributions refer to sustainability such as "Transition of Textile Industry to Embrace Circularity" from Uday Gill, Chief Strategy Officer, Indorama Ventures Ltd, "Tailwind for Polylactic acid (PLA)" and "How the EU aims to transform its textile industries" both from nova-Institut GmbH.

All issues from 2011 have been produced thanks to support of Lenzing Group in many aspects. All market data, however, are result of the independent research by The Fiber Year GmbH. Hence, statements and conclusions do not necessarily reflect the assessment of the Lenzing Group. Furthermore, I want to address sincere thanks to all companies, associations, colleagues and friends in helping me to make the textile yearbook.

Yours sincerely,

didness ly Desde



1.2 Executive Summary

The year 2021 was another challenging year that ended on a generally positive note with an estimated 6.1% global growth as revealed by IMF's World Economic Outlook in April. Optimism was quickly dampened following Russia's war against Ukraine, renewed disruptions in supply chains that heat up further commodity price pressure, geopolitical instability, further course of pandemic and heightening uncertainty on reliable energy supply essentially in Europe.

Risks and supply disruptions from pandemic, lack in logistics, freight costs at elevated level and port congestions were perceivable through the entire year. Labor shortage and Americans quitting their jobs at a record pace with more than 47 million last year, the pandemic-era trend known as the "Great Resignation", entered its second year. It was additionally supported by record job openings with better pay but economic headwinds will probably diminish this trend that, finally, worsened profitability of companies due to temporarily shuttering spinning lines and spending more money to seek and train workers.

Yet another concern arose from inflation that was high throughout most of 2021 and further climbed early 2022 to rates not seen since the early 1980s. Cotton price measured in Cotlook A-Index arrived at 11-year high mid-May at US\$3.60 per kg and feedstocks, fibers, chemicals, additives, dyes and all other utilities sharply went up in prices.

Apparel demand has witnessed improvements but last year's development certainly was not a broadly based recovery. Deep discounting and unsold merchandise from previous year brought into stores affected manufacturing. Strong U.S. demand prevented something worse with increasing apparel import demand to 8% above pre-pandemic level in volume terms while EU region, UK, Japan, Korea and Taiwan jointly remained 12% below 2019 level.

The global chip shortage, shutting down automotive production lines last year, and the current supply shortfall in Europe for cable looms sourced in Ukraine will continue to impact automotive production rates and consumption for automotive enduses. Good news from U.S. perspective was that Senate in March approved US\$52 billion in subsidies for semiconductor chips manufacturing and the first billion-dollar chip factory just opened in upstate New York in May. A cautious improvement of textile orders can already be felt.

Outsized demand from home textiles and hygiene in recent two years began to show signs of weakening in late 2021. Any expansions are not expected for 2022 just as demand from construction as a gradual increase in interest rates may slow activities as recently seen in the U.S. after mortgage rate in April reached new high in more than a decade.

In a nutshell, return of the global fiber and spunlaid industry to its long-term growth path appears ambitious for 2022. It would necessitate 6.1% growth at global stage in 2022 but adverse conditions prevailing make this target rather disputable. Hence, world business may lose at least three years of growth after an already accumulated loss of more than 5 million tonnes in the recent two years.

In 2021, upstream market was driven by manmade fibers that rose at fastest pace in 11 years while natural fibers and spunlaids decreased. Total volume expanded less than 4% to 127 million tonnes. A moment of history arose for the filament industry as it took over the majority share in primary spinning stage. Furthermore, global filament and spun yarn output skyrocketed at fastest pace in the century to surpass the magic threshold of 100 million tonnes.



1.2 Executive Summary

The volume from spinning segment entering the fabric processing stage grew at much faster pace in consequence of cotton destocking and considerably lower manmade fiber inventory accumulation than in 2020. Detailed information will again be presented in a webinar in cooperation with Groz-Beckert in September.

For more detailed information please visit www.thefiberyear.com and step in contact with us at info@thefiberyear.com or by phone +41 71 450 06 82



1.4 Contributions from Industry Experts



Michael Carus
Founder and CEO
nova-Institut GmbH
Hürth, Germany
www.nova-institute.eu



Li Guimei
President
China Nonwovens and Industrial Textiles Association (CNITA)
Beijing, PR China
www.cnita.org.cn



Uday Gill
Chief Strategy Officer
Indorama Ventures Ltd.
Bangkok, Thailand
www.indoramaventures.com



Dr. Asta Partanen
Senior Market Expert Biocomposites,
Wood and Cellulose-based Materials
nova-Institut GmbH
Hürth, Germany
www.nova-institute.eu



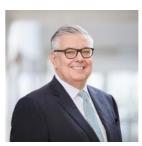
Nicolas Hark
Policy Expert
nova-Institut GmbH
Hürth, Germany
www.nova-institute.eu



Pauline Ruiz
Biopolymer Expert
nova-Institut GmbH
Hürth, Germany
www.nova-institute.eu



Brad Kalil
Director of Market Intelligence and
Economic Insights
INDA
Cary, NC, United States
www.inda.org



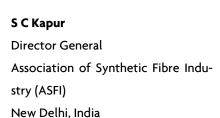
Eric Schöller

Member of the Executive Board

Groz-Beckert KG

Albstadt, Germany

www.groz-beckert.com





Dr. Pia Skoczinski
Biopolymer Expert
nova-Institut GmbH
Hürth, Germany
www.nova-institute.eu



Robert van de Kerkhof Member of the Managing Board Lenzing AG Lenzing, Austria www.lenzing.com



Isak Staats
Chair IWTO Market Intelligence
International Wool Textile Organisation (IWTO)
Port Elizabeth, South Africa
www.iwto.org



1.4 Contributions from Industry Experts



Sun Ruizhe
President
China National Textile and Apparel
Council (CNTAC)
Beijing, PR China
www.ctei.cn



Kanwar Usman
Head of Textiles
International Cotton Advisory Committee (ICAC)
Washington, DC, United States
www.icac.org



Dalena White
Secretary General
IWTO
Brussels, Belgium
www.iwto.org



Dr. Olivier Zieschank
Director
ITMF
Zurich, Switzerland
www.itmf.org