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人類環境與非織造布



——迎接 21 世紀挑戰

Meeting the 21st century challenge

4179



目 录

CONTENTS

China's Nonwovens Industry—Meeting the 21 st Century 迎向 21 世纪的中国非织造布工业	Wang Yan-xi 王延熹 (1)
The North American Nonwovens Industry 北美非织造布工业的现状与前景	T.R.Wirtz (6)
The Situation of Production and Market for Disposable Hygiene Products in China 中国的一次性卫生用品工业	Jiang Man-xia 江曼霞 (23)
Celebrate the Elderly—Innovations in Adult Incontinence Products 庆祝老人节—成人失禁产品的创新	Jane Bachhuber 简·巴库博 (39)
Prospects for Absorbent Hygiene Products in Selected Asia-Pacific Markets 亚太地区吸收类卫生产品市场前景	Ian W. Butler (50)
The Super-absorbent Polymers 超吸收树脂	Volker. Frenz (65)
The Effect of Bicomponent Fiber Technology on Spinning Performance and Structure and Properties of Spunbond Fabrics 双组分纤维技术对纺丝性能与纺粘法非织造布结构及特性的影响	Fumin Lu 卢福民 (81)
The Introduction of New Technology Needle-Punched and Bonding Nonwoven 针刺非织布新技术介绍【复丝长纤针刺设备】	Shuiquan Wang 王水泉 (101)
Updated Technology of Spunbond & SMS Plants SMS 和纺粘法设备的最新技术进展	Atsuo Tokunaga (127)
New Concepts for Fiber Production and Spunlace technology for Microdenier Bicomponent Split Fibers—From Polymer to Final Product 从聚合物到最终产品—纤维生产的新概念 以及用于微细旦双组份分裂纤维的水刺技术	Alfred Watzl (136)

- N.S.C. Nonwovens Pro-Dyn® System: A Revolutionary
Progress in Nonwovens Processing Technology William Wu
非织造布工业的一种革命性工艺—NSC 集团 Pro-Dyn 系统 吴雯龙 (157)
- Application of Geotextile to Regulation Works of Deep-Water
Navigation Channel in Yangtze Estuary Zhu Jian-fei, Jin-liu, Fan Qi-jin
土工织物在长江口深水航道治理工程中的应用 朱剑飞, 金鏐, 范期锦 (169)
- Hyperpunch Technology for Artificial Leather
and Papermaker Felts Dipl.-Ing. W. Weng
用于人造皮革和造纸毛毯新的针刺技术—Hyperpunch (198)
- The New Generation of Medical Cloth—
Water - Soluble Spunlace Nonwoven Wang Yu-ming
新一代医疗用布—水溶性水刺法非织造布 王毓鸣 (212)
- Spunbonded and Nonwoven Composite Materials for Filtration Carol B. Webster
纺粘法和非织造布复合过滤材料 (223)
- Environment-Protection:
The Application of Nonwovens Filter Bag in Air Filtering in China Xiao Rong-xu
环境保护, 非织造布滤袋在中国的应用 肖容绪 (240)
- Geosynthetics Application in Municipal Solid Waste Landfill Zhen Jian-wu
土工合成材料在垃圾填埋场中的应用 郑健吾 (249)
- The Application of the Reclaimed Fiber in Automobile
Decorative Material Xiang yang
再生纤维在汽车装饰材料中的应用 向阳 (259)
- P84-Polyimide Fibers in Nonwovens Applications Herbert. Griesser
P84 聚酰亚胺纤维在非织造布中的应用 (282)
- Comparison of Electrostatic Process in Making Nonwoven
Electrets for Filters Peter P. Tsai
非织造布驻极滤料静电施加技术之比较 彼得·蔡 (295)
- Modern Coating & Finishing Technology for your Flexible Future Brabant B.V
现代涂层和后整理技术—满足您未来的灵活要求 (307)

Micrex® Compressive Finishing Technology for Nonwovens Micrex 公司的非织造布皱缩整理技术	Brett Thacher (313)
The Development and Prospect of the Production of Chinese Spunbond Nonwovens 中国纺粘法非织造布生产的进展与展望	Zhou Rong Hua 邹荣华 (318)
对开发非织造布合成革基材的展望	王继祖 (330)
Tencel 纤维水刺布的研制及其性能分析	尹宝林 陈喆 李洪 (333)
甲壳质水刺布及其应用	邱涛 陈喆 (338)
舒肤网非织造布生产技术及性能	陈喆 周宏辉 (344)
土工织物渗透性能评价及其工程意义	周蓉 (348)
有机耐热纤维的发展及其在非织造布上的应用	王曙中 (353)
非织造布在驻极体传声器中的应用	吴海波 靳向煜 林虹 (357)
提高短纤非织造布的横向强力, 改进生产工艺结构	邓正渔 (364)
新型非织造用粘胶纤维	靳向煜 (366)

SINCE'99

**CHINA'S NONWOVENS INDUSTRY
——MEETING THE 21ST CENTURY**

by

Wang Yan Xi

CNTA

Introduction

This paper briefly introduces the status of China's nonwovens industry, especially explaining why during the recent 20 years China nonwovens industry gets so big progress.

Reform and opening policy is the driving force for the 0 rapid growth of China nonwovens industry. Finally, author gives some prospect of China's nonwovens industry in the next decade.

1. The Status of China's Nonwovens Industry
2. The Future of China's Nonwovens Industry (2000---2010)
3. The Role of CNTA

迎向 21 世纪的中国非织造布工业

王延熹（中纺学会非织布技术分会）

1. 中国非织造布工业的现状

高速度发展的 20 年

1.1 背景

- (1) 改革与开放——中国非织造布工业发展的原动力
- (2) 中国 1978——1998 年经济迅猛发展
1978 年——1998 年中国 GDP 的飞速增长（图 1）

图 1

1978 年——1997 年中国按人口平均消费额的增长（图 2）

图 2

1978 年——1998 年中国主要工业产品的增长（图 3）

图 3

1998 年中国国民生产总值已达 79553 亿元（合 9610 亿美元），占世界第七位。

进出口总额达：3240 亿美元，占世界第十位。

引进外资：589 亿美元，占世界第二位。

外汇储备达：1450 亿美元。

1998 年中国主要工农业产品产量世界排名为：

第一位：钢、煤、水泥、粮食、棉花、纱线、纺织品、服装、肉类、彩电等。

第二位：电力、化肥、化学纤维等。

1998 年中国城市居民人均可支配收入为 5425 元，而 1978 年为 378 元。

1998 年中国农村居民人均纯收入为：2160 元，而 1949 年仅为 43.8 元。

1998 年中国城市居民人均居住面积为 8.8M²，而 1978 年仅为 3.7M²。

- (3) 中国化纤工业 20 年的迅猛发展为中国非织造布工业的发展提供了充分的原料保证。

1960 年中国化纤总产量仅为 1.1 万吨，1975 年也只有 15 万吨，而 1998 年则飞速增至 515.9 万吨，其中 464.6 万吨为合成纤维（涤纶、丙纶、腈纶、尼纶等）。

图 4 为 1960~1998 年中国化学纤维工业的增长曲线，及 2000 年、2010 年的预测产量。

图 4

1.2 中国非织造工业 20 年的迅猛发展

基于以上的背景介绍，不难理解为什么中国的非织造布工业在最近 20 年中取得飞速发展。

- (1) 1958~1978 年（前 20 年）。

开发研究、中试、科研成果推广应用、独立自主、自力更生形成小规模非织造布工业雏形。

- (2) 1978~1998 年（后 20 年）。

高速前进的中国非织造布工业。

*政府有关部门大力支持，引进国外先进技术、设备，技术水平迅速提高。

*各行各业大力兴办非织布企业，非织布工业由沿海向内地推进。

*大力推进国际、国内非织布技术交流，举办 SINCE，CNTA 为推动中国非织布工业的形成、技术水平的提高作出了应有贡献。

1978 年中国非织造布产量仅 5400 吨，而 1998 年则迅猛增加至 25.5 万多吨，中国已形成初具规模，而且加工技术门类较齐全的非织造布工业。1978 年产量已居世界第三位，仅次于美国、日本。

图 5

1978——1988 年中国非织布产量之增长

中国在 1978 年 5400 吨非织造布总产量中干法占了 96% 以上，其余为湿法，而干法主要是饱和浸渍为主的化学粘合法，针刺法与纤网型-缝编法也有一定比重。纺丝成网法那时尚未应用，熔喷法则刚在 STRI 取得实验室研究成果。

1998 年，中国的非织造布工业已在技术结构上有极大改变，聚合物直接成布法已占相当比例，水刺已形成一定生产规模，干法造纸非织造布已有一条线投产。图 6 为 1998 年中国不同非织造布生产技术手段所占比重。

图 6

1.3 中国非织造布工业在世界同行中的地位与不足

1998 年世界非织造布总产量已约 280 万吨，中国已由 1978 年在世界上无足轻重的地位，上升至占世界总产量的 9% 左右，图 7 为 1998 年世界主要非织布生产国、地区所占比例。

图 7

尽管，与过去相比，中国的非织造布工业已取得了长足的进步，但与世界水平，特别是与先进国家相比仍存在很多不足之处。

1998 年世界人均非织造布产量已达 0.46Kg 左右，而中国仅为 0.2Kg，与美国的 4Kg 左右，日本的 2.4Kg、西欧的 2.3Kg 相比则更为落后。

主要差距还表现在：

产品开发能力较差；

产品品种与质量不能满足市场需要；

企业的管理水平、技术水平较低；

非织造布市场培育、发展不足，生产设备利用率不足等；

2. 中国非织造布工业的发展前景

2.1 中国国民经济今后的稳定、持续增长为中国非织造布工业进一步发展创造良好条件。2010 年中国国民经济的总体规模将比 2000 年翻一番。

人民生活水平与素质将进一步大幅度提高

基础建设更大规模展开

工农业现代化水平进一步快速增长

这一切将为中国非织造布产品提供巨大的市场，今后将进一步扩大应用与市场的非织造布产品主要有：

轻而暖的非织布复合保暖材料

各种医用卫生材料

环保、过滤材料
新型土工布及复合材料
汽车用内饰材料
家用装饰材料
新型建筑材料
各种复合材料
中高档合成革及人造革基布
各种农业用布…等

2.2 发展规模预测

根据今后十年中国国民经济发展规模与速度、工农业发展需求、化纤工业发展预测。今后 5 年与 10 年中国非织造布市场预测为：

2005 年中国非织造布总产量将达 45 万吨左右

2010 年将达到 75~80 万吨左右

2.3 实现这一目标的关键与主要对策

中国非织造布工业今后进一步发展必须依靠技术创新，努力提高现有企业的管理水平、技术水平、形成一支非织造布技术的科研、创新队伍，必须涌现一大批中国自己的非织造布技术专利与技术诀窍，形成独立自己的产品开发能力。

进一步重视培育与发展中国的非织造布市场。加强流通领域的工作。

人类环境与非织造布这一理念为中心，充分认识非织造新材料是四大工业部门——纺织、造纸、塑料、皮革的边缘领域、新学科，加强对非织布有关技术理论、组合技术与深加工技术的研究，特别重视对聚合物原料研究及加强对天然纤维、废次纤维的综合利用、合理利用。推动技术与经济的进一步紧密结合。CNTA 将为此与广大会员单位，非织布科研技术人员、管理人员共同努力奋斗。

SINCE'99

THE NORTH AMERICAN NONWOVENS INDUSTRY

by

T.R. Wirtz-President

INDA-Association of the Nonwovens Fabrics Industry

TED WIRTZ

Biographical Information

Ted Wirtz spent over 30 years working in the Fortune 500 environment. He held both line and staff positions in sales and marketing, strategic planning and business development. As Director of Business Planning at Group level at The Dexter Corporation (NYSE), his assignments included coordinating long range planning and business development activities of six operating divisions in such diverse industries as specialty papers, nonwovens, engineered plastics, sailcloth and permanent magnets.

Mr. Wirtz entered the management consulting business in January 1988, focusing on questions of corporate and business strategy, marketing strategies and tactics, market and competitor profiling and linking market needs with core competencies. He has consulted to large publicly traded corporations as well as the smaller and mid-tier privately held companies.

In December 1996, Mr. Wirtz was elected to his current position of President-CEO of INDA, The Association of the Nonwoven Fabrics Industry based in Cary, NC (Research Triangle Park area). INDA is an international trade association with 170 corporate members, a staff of 15 and an annual operating budget of \$2.5 million. INDA membership lists many internationally recognized companies including: Allegiance, Amoco, BASF, Courtaulds, Dexter Corporation, DuPont, Freudenberg, BFGoodrich, Johnson & Johnson, Kimberly-Clark, 3M and Weyerhaeuser.

During his business career, Mr. Wirtz has taken an active interest in a wide variety of outside organizations. He has held leadership roles in many industry trade associations including: INDA, The American Forest & Paper Association, The U.S. Chamber of Commerce and The National Association of Manufacturers. He has served as a Board member and President of the local Chamber of Commerce and on the Board of The Combined Health Appeal of Connecticut. Mr. Wirtz has been active in The Connecticut Business and Industry Association and led fund raising campaigns generating support from the Connecticut business community to improve and enlarge the Science Museum of Connecticut.

A graduate of Georgia Institute of Technology, he has attended numerous continuing education courses including executive development programs at The Wharton School and The Strategic Planning Institute. Mr. Wirtz has both attended and lectured at The American Management Association. He is a frequent speaker at trade and community organizations and has written many articles for trade journals and other publications.

Current and Future Trends

The North American Nonwovens Industry

T. R. Wirtz - President

INDA - Association of the Nonwovens Fabrics Industry

Nonwovens Symposium

SINCE-99 Conference
Shanghai, China

Today's Agenda

- I. About INDA
- II. Major US Markets
- III. Top US Manufacturers
- IV. Future Worldwide Trends



INDA - Association of the Nonwoven Fabrics Industry

INDA's MISSION

*To promote the growth and profitability
of the Nonwovens Fabrics Industry*

Staff	-	17 People
Annual Budget	-	\$3 Million
Members	-	215

Charting the Path Forward



PRODUCTS THAT USE NONWOVENS

AGRICULTURE

Crop covers
Turf protection products
Nursery overwintering
Weed Control fabrics
Root bags
Containers
Capillary matting

AUTOMOTIVE

Trunk applications
Floor covers
Sideliners
Front and back liners
Wheelhouse covers
Rear shelf trim panel covers
Seat applications
Headliner
Cover slip sheets
Foam reinforcements
Oil, Air & other filters
Door trim panel carpets
Door trim panel padding
Vinyl, landau cover backings

HOME FURNISHINGS

Furniture construction sheeting
Insulators, arms and back
Cushion ticking
Dust covers
Decking
Skirt linings
Pull strips
Bedding construction sheeting
Quilt backing
Dust covers
Flanging
Spring wrap
Insulators
Quilt backings
Blankets
Wallcovering backings
Acoustical wallcoverings
Upholstery backings
Pillows, pillowcases
Window treatments
Drapery components
Carpet backings, carpets and pads
Mattress pad components

INDUSTRIAL/MILITARY

Coated fabrics
Filters
Semiconductor polishing pads
Wipers
Clean room apparel
HVAC filters
Military clothing
Abrasives
Cable insulation
Reinforced plastics
Tapes
Protective clothing, lab coats
Sorbents
Lubricating pads
Flame barriers
Packaging
Conveyor belts
Display felts
Papermaker felts
Noise absorbent felts

Charting the Path Forward

PRODUCTS THAT USE NONWOVENS - continued

SCHOOL, OFFICE

Bookcovers
Mailing envelopes, labels
Floppy disk liners
Towels
Pen nibs

CLOTHING

Interlinings
Clothing & glove insulation
Bra & shoulder padding
Handbag components
Shoe components

GEOTEXTILES

Asphalt overlay
Road & railroad beds underlay
Soil stabilization
Drainage
Dam & stream embankments
Golf and tennis courts
Artificial turf
Sedimentation & erosion control
Pond liners

HEALTHCARE

Surgical caps, gowns, masks
& shoe covers
Sponges, dressings, wipes
Orthopedic padding
Bandages, tapes
Dental bibs
Drapes, wraps, packs
Sterile packaging
Bed linen, underpads
Transdermal drug delivery
Contamination control gowns
Electrodes
Examination gowns
Filters for IV solutions,
blood oxygenators &
kidney dialyzers

HOUSEHOLD

Wipes, wet, dry, polishing
Filters
Aprons
Scouring pads
Fabric softener sheets
Dust cloths, mops
Placemats, napkins
Ironing board pads
Washcloths
Tablecloths

LEISURE, TRAVEL

Sleeping bags
Tarpaulins, tents
Artificial leather, luggage
Airline headrests, pillow cases

PERSONAL CARE

Vacuum cleaner bags
Diapers
Sanitary napkins, tampons
Tea, coffee bags
Training pants
Incontinence products
Dry & wet wipes
Cosmetic applicators, removers
Lens tissue
Hand warmers
Bulb pads

CONSTRUCTION

Insulation
Roofing and tile underlayment
Acoustical ceilings
Housewrap
Pipe wrap

Charting the Path Forward

Nonwoven Markets - North America

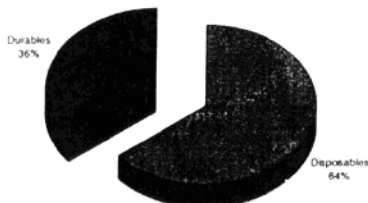
18.6 Billion Sq Yds



2.8 Billion \$



1.4 Billion Lbs



Charting the Path Forward

**Nonwoven Volume - 1998
Disposable Market**

(Millions of Sq. Yds.)

Cover Stock	9,800
Filtration	600
Medical	485
Wipers	300
Other Disposables	900

Total Disposables	15,500
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Source: INDA estimates

Charting the Path Forward

**Nonwoven Volume - 1998
Durable Market**

(Millions of Sq. Yds.)

Furniture/Bedding	1,325
Geotextiles	455
Construction	320
Interlinings	300
Electronic Components	275
Other Durables	425

Total Durables	3,100
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Source: INDA estimates

Charting the Path Forward

**Nonwoven Volume - 1998
by Forming Technology**

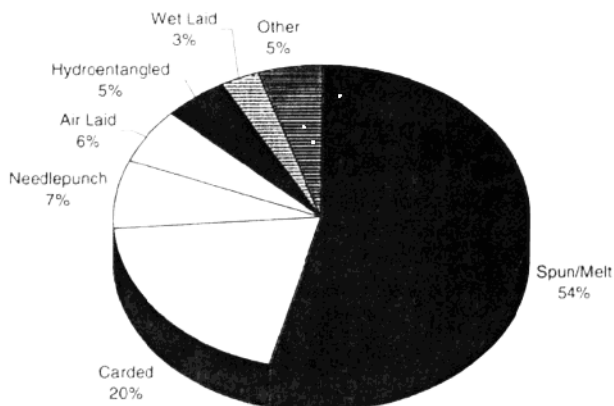
(Millions of Sq. Yds.)

Spunbond/Melt Blown	10,100
Carded	3,700
Needlepunch	1,300
Air Laid	1,100
Hydroentangled	900
Other	1,600

Total	18,600
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Source: INDA estimates
Charting the Path Forward

**Nonwoven Markets - by Technology
North America**



Source: INDA estimates
Charting the Path Forward