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Overview of Nonwovens and Potential for Pakistan

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m.tausif@leeds.ac.uk
Textiles in Leeds

• Founded in 1874, originally as the Yorkshire College of Science.
• Leeds is one of only two Russell group Universities specialising in textile science and engineering (with Manchester).
• Research themes
  • Fibre science and technology
  • Fibre and fabric functionalisation
  • Nonwoven fabric technology
  • Performance fabrics
  • Sustainable materials and processes
• Highest ranked technical textile research centre in the UK
Spin-outs from research

Virtually water-less washing

Nonwoven Innovation

Natural extracts for industrial use
FAREWELL RECYCLING, IT’S NOW TIME FOR INFINITY-CYCLING
Nonwoven Structures and Applications

- Woven
- Knitted
- Nonwoven

Pie chart showing applications:
- Construction 20%
- Wipes 16%
- Other 12%
- Shoes/clothing 3%
- Medicine 3%
- Filtration 4%
- Vehicle construction 5%
- Furniture industry 5%
- Hygiene 32%
Raw Materials

Polymer-to-web
- PP 83%
- PET 12%
- PE 2%
- Bico & PA 2%
- Others 1%

Fiber-based
- PP 26%
- PSF 30%
- WP 20%
- Binders 5%
- Natural Fibers 3%
- Bico & others 9%

Source: ANFA, EDANA, INDA
Web Formation Methods

Key Web Formation Methods

- Dry-laid
  - Carding
- Wet-laid
  - Air-laying
  - Spun-laying
- Polymer-laid
  - Meltblowing
  - Electrospinning
Web Bonding Methods

- Thermal
  - Calendering
- Chemical
  - Through-air bonding
  - Various binder application methods
- Mechanical
  - Hydroentanglement
  - Needlepunching
## Pakistan - Exports

### Export of Goods by Commodity and Services by Type

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>(A) Total Export Receipts (Scheduled Banks)</td>
<td>200,051,557</td>
<td>217,157,414</td>
<td>2,275,444,064</td>
<td>2,338,549,868</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11 - Textiles and Textile Articles</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>50 - Silk</td>
<td>20,535</td>
<td>48,251</td>
<td>388,870</td>
<td>2,730,432</td>
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<td></td>
</tr>
<tr>
<td>51 - Wool, Fine or Coarse Animal Hair, Horsehair Yarn</td>
<td>100,343</td>
<td>148,064</td>
<td>1,228,222</td>
<td>2,051,473</td>
<td></td>
<td></td>
</tr>
<tr>
<td>52 - Cotton</td>
<td>38,078,434</td>
<td>39,945,301</td>
<td>426,277,334</td>
<td>488,075,819</td>
<td></td>
<td></td>
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<tr>
<td>53 - Other Vegetable Textile Fibres, Paper Yarn etc.</td>
<td>19,375</td>
<td>0</td>
<td>312,357</td>
<td>337,931</td>
<td></td>
<td></td>
</tr>
<tr>
<td>54 - Man-Made Filaments</td>
<td>364,333</td>
<td>457,030</td>
<td>3,925,167</td>
<td>5,041,529</td>
<td></td>
<td></td>
</tr>
<tr>
<td>55 - Man-Made Staple Fibers</td>
<td>2,862,584</td>
<td>3,055,064</td>
<td>32,735,522</td>
<td>39,171,606</td>
<td></td>
<td></td>
</tr>
<tr>
<td>56 - Wadding, Felt and Nonwovens, Special Yarn, Twine</td>
<td>958,486</td>
<td>926,848</td>
<td>9,711,831</td>
<td>5,086,221</td>
<td></td>
<td></td>
</tr>
<tr>
<td>57 - Carpets and other Textile Floor Coverings</td>
<td>955,998</td>
<td>1,249,494</td>
<td>11,711,052</td>
<td>12,074,829</td>
<td></td>
<td></td>
</tr>
<tr>
<td>58 - Special Woven Fabrics, Tufted Textiles Fabrics, Lace</td>
<td>546,984</td>
<td>877,860</td>
<td>7,296,023</td>
<td>11,191,540</td>
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<tr>
<td>59 - Impregnated, Coated, Covered or Laminated Tex. Fab.</td>
<td>326,562</td>
<td>416,840</td>
<td>4,484,837</td>
<td>5,040,663</td>
<td></td>
<td></td>
</tr>
<tr>
<td>60 - Knitted or Crocheted Fabrics</td>
<td>427,185</td>
<td>516,092</td>
<td>4,072,607</td>
<td>4,237,005</td>
<td></td>
<td></td>
</tr>
<tr>
<td>61 - Articles of Apparel &amp; Clothing Accessories Knit/Cr</td>
<td>17,495,429</td>
<td>18,986,109</td>
<td>213,550,566</td>
<td>212,293,603</td>
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<td></td>
</tr>
<tr>
<td>62 - Articles of Apparel/Clothing Acces not Knitted /Cro</td>
<td>17,447,259</td>
<td>15,325,591</td>
<td>188,626,831</td>
<td>171,867,530</td>
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<td></td>
</tr>
<tr>
<td>63 - Other Made-up Textile Articles, Sets, Worn Clothin</td>
<td>30,065,794</td>
<td>31,199,676</td>
<td>358,038,341</td>
<td>342,853,969</td>
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</tr>
</tbody>
</table>

US$ 90 Million ~ 1% of Textile Exports
## Imports of Goods by Commodity and Services by Type

### Pakistan - Imports

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td></td>
<td>Thousand Rs.</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>(A) Total Imports Payments (Scheduled Banks)</td>
<td>344,577,039</td>
<td>356,398,830</td>
<td>3,823,537,230</td>
<td>3,958,349,545</td>
</tr>
<tr>
<td>11-Textiles and Textile Articles</td>
<td>22,363,120</td>
<td>18,133,183</td>
<td>227,043,661</td>
<td>222,553,960</td>
</tr>
<tr>
<td>50**Silk</td>
<td>572,063</td>
<td>243,322</td>
<td>5,177,497</td>
<td>2,401,751</td>
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<tr>
<td>51**Wool, Fine or Coarse Animal Hair, Horsetail Yarn</td>
<td>49,300</td>
<td>80,681</td>
<td>1,099,575</td>
<td>940,047</td>
</tr>
<tr>
<td>52**Cotton</td>
<td>5,836,189</td>
<td>3,431,741</td>
<td>57,492,381</td>
<td>70,799,997</td>
</tr>
<tr>
<td>53**Other Vegetable Textile Fibres, Paper Yarn etc.</td>
<td>250,724</td>
<td>348,317</td>
<td>4,725,165</td>
<td>6,697,263</td>
</tr>
<tr>
<td>54**Man-Made Filaments</td>
<td>5,420,390</td>
<td>5,111,358</td>
<td>54,745,444</td>
<td>54,353,798</td>
</tr>
<tr>
<td>55**Man-Made Staple Fibers</td>
<td>5,352,044</td>
<td>5,880,911</td>
<td>61,469,749</td>
<td>54,267,350</td>
</tr>
<tr>
<td>56**Wadding, Felt and Nonwovens, Special Yarn, Twine</td>
<td>560,530</td>
<td>448,041</td>
<td>5,493,463</td>
<td>3,986,667</td>
</tr>
<tr>
<td>57** Carpets and other Textile Floor Coverings</td>
<td>90,110</td>
<td>60,538</td>
<td>815,978</td>
<td>673,063</td>
</tr>
<tr>
<td>58**Special Woven Fabrics, Tufted Textiles Fabrics, Lace</td>
<td>1,075,486</td>
<td>208,065</td>
<td>3,993,505</td>
<td>2,395,477</td>
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<tr>
<td>59**Impregnated, Coated, Covered or Laminated Tex. Fab.</td>
<td>512,761</td>
<td>546,131</td>
<td>5,640,500</td>
<td>5,030,142</td>
</tr>
<tr>
<td>60**Knitted or Crocheted Fabrics</td>
<td>519,603</td>
<td>209,302</td>
<td>3,182,463</td>
<td>2,725,682</td>
</tr>
<tr>
<td>61**Articles of Apparel &amp; Clothing Accessories Knit/Cr</td>
<td>588,656</td>
<td>182,131</td>
<td>3,799,453</td>
<td>2,015,563</td>
</tr>
<tr>
<td>62**Articles of Apparel/Clothing Acces not Knitted/Cro</td>
<td>179,471</td>
<td>337,824</td>
<td>2,518,605</td>
<td>2,355,950</td>
</tr>
<tr>
<td>63**Other Made-up Textile Articles, Sets, Worn Clothin</td>
<td>1,355,793</td>
<td>1,044,822</td>
<td>16,889,882</td>
<td>13,911,208</td>
</tr>
</tbody>
</table>

**US$ 50 Million**
PU or PVC coated polyester (Artificial leather), Fusible interlinings, Flocked Nonwoven, Polyester felts (could be of multiple use), Filter fabric, Shoe applications, Coat shoulder pad
Pakistan – Potential Areas

‘Nonwoven fabric can stop canal water seepage’

LAHORE: Nonwoven fabric application in canal lining could save at least 10 percent of water, which is lost through seepage, causing water logging in fertile soils around the canals, a textile expert said on Monday.
Pakistan – Potential Areas
Pakistan – Nonwovens Industry

- Spunbond/Needlepunching/Diapers
- Spunbond/Hydroentanglement
- Spunbond/Needlepunching
- Waddings, Filter fabric
- Spunbond/Needlepunching/Diapers
Thank you