Textile Processing and Silk Reeling Technology

(Fabric Varieties, Silk as Textile Fibre, Fluidized Beds to Textile Processing, Cellulose Ethers, Nitrocellulose, Printing Impressions, Surfactants, Flame Retardants for Textiles, Chemical Used in Textiles, Tone and Shade Control in Textiles, Crease Resistance of Cellulose Textiles)
Textile manufacturing is a major industry. It is based on the conversion of fibre into yarn, yarn into fabric. These are then dyed or printed, fabricated into clothes. Different types of fibre are used to produce yarn. Cotton remains the most important natural fibre, so is treated in depth.
There are many variable processes available at the spinning and fabric-forming stages coupled with the complexities of the finishing and colouration processes to the production of a wide range of products. There remains a large industry that uses hand techniques to achieve the same results.
The name derives from the twisting and spiralling movements of the silkworm larva as it wraps itself in its cocoon, and to the metaphorical principle of "reeling the silk from a silk worm's cocoon". In order to draw out the silk successfully the action must be smooth and consistent without jerking or changing direction sharply. Too fast, the silk breaks, too slow, it sticks to itself and becomes tangled. Thus silk reeling movements are continuous, cyclic, spiralling patterns performed at constant speed with the "light touch" of drawing silk. Silk reeling is trained in solo forms and stances as well as in pushing hands with a partner.
The silk reeling techniques are excellent methods to produce superior grade raw silk which is used by the textile industry to produce exotic fabric. Silk reeling is the final and purely commercial phase of sericulture. It is concerned with unwinding of the silk filaments of the cocoon. The sericulture industry is agro based and flourishing mostly in rural areas. More than 50 per cent of silk is reeled by a villager using country charka which forms the cottage industry.
Silk provides much needed work in several developing and labour rich countries. The textile industry is primarily concerned with the production of yarn, and cloth and the subsequent design or manufacture of clothing and their distribution. The raw material may be natural or synthetic using products of the chemical industry.
Market Outlook

The global silk market is projected to reach USD 16.94 Billion by 2021, at a CAGR of 7.8% from 2016 to 2021.
Silk Production in India

<table>
<thead>
<tr>
<th>Year</th>
<th>Raw Silk Production (MTs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014-15</td>
<td>28708</td>
</tr>
<tr>
<td>2013-14</td>
<td>26480</td>
</tr>
<tr>
<td>2012-13</td>
<td>23679</td>
</tr>
<tr>
<td>2011-12</td>
<td>23060</td>
</tr>
<tr>
<td>2010-11</td>
<td>20410</td>
</tr>
<tr>
<td>2009-10</td>
<td>19690</td>
</tr>
<tr>
<td>2008-09</td>
<td>18370</td>
</tr>
<tr>
<td>2007-08</td>
<td>18320</td>
</tr>
<tr>
<td>2006-07</td>
<td>18475</td>
</tr>
<tr>
<td>2005-06</td>
<td>17305</td>
</tr>
<tr>
<td>2004-05</td>
<td>16500</td>
</tr>
</tbody>
</table>
The market size of India’s textiles and apparel industry was valued at about US$108 billion and expected to reach US$223 billion by 2021.
India’s Textile Industry

![Graph showing US$ Billion for different years]

- 2006: 52
- 2011: 89
- 2016*: 143
- 2021*: 223

Source: NPCS

[www.entrepreneurindia.co](http://www.entrepreneurindia.co)
# Raw Silk Imports

<table>
<thead>
<tr>
<th>Year</th>
<th>Quantity (MT)</th>
<th>Value (Rs. in Crores)</th>
</tr>
</thead>
<tbody>
<tr>
<td>XI Plan (2011-12)</td>
<td>5683</td>
<td>1111.53</td>
</tr>
<tr>
<td>XII Plan 2012-13</td>
<td>4959</td>
<td>1238.56</td>
</tr>
<tr>
<td>2013-14</td>
<td>3260</td>
<td>896.44</td>
</tr>
<tr>
<td>2014-15</td>
<td>3489</td>
<td>970.82</td>
</tr>
<tr>
<td>2015-16</td>
<td>3529</td>
<td>1006.16</td>
</tr>
<tr>
<td>2016-17* (p)</td>
<td>2536</td>
<td>707.25</td>
</tr>
</tbody>
</table>
India is the second largest producer of silk in the World. Among the four varieties of silk produced in 2015-16,

The textiles sector is the second largest provider of employment after agriculture. Thus, the growth and all round development to this industry has a direct bearing on the improvement of India's economy.

Textiles exports from India will touch US$ 185 billion by the year 2024-25.
## Export of Textiles

<table>
<thead>
<tr>
<th>Year</th>
<th>World Textiles Exports ($ Billion)</th>
<th>India's Exports ($ billion)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
<td>860.6</td>
<td>54.4</td>
</tr>
<tr>
<td>2017</td>
<td>903.6</td>
<td>62.6</td>
</tr>
<tr>
<td>2018</td>
<td>948.8</td>
<td>72.1</td>
</tr>
<tr>
<td>2019</td>
<td>996.2</td>
<td>83.0</td>
</tr>
<tr>
<td>2020</td>
<td>1046.0</td>
<td>95.5</td>
</tr>
<tr>
<td>2021</td>
<td>1098.3</td>
<td>109.9</td>
</tr>
<tr>
<td>2022</td>
<td>1153.3</td>
<td>126.5</td>
</tr>
<tr>
<td>2023</td>
<td>1210.9</td>
<td>145.6</td>
</tr>
</tbody>
</table>
### Domestic Textile Industry

<table>
<thead>
<tr>
<th>Year</th>
<th>Domestic Industry ($ Billion)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
<td>82.6</td>
</tr>
<tr>
<td>2017</td>
<td>88.4</td>
</tr>
<tr>
<td>2018</td>
<td>94.5</td>
</tr>
<tr>
<td>2019</td>
<td>101.2</td>
</tr>
<tr>
<td>2020</td>
<td>108.2</td>
</tr>
<tr>
<td>2021</td>
<td>115.8</td>
</tr>
<tr>
<td>2022</td>
<td>123.9</td>
</tr>
<tr>
<td>2023</td>
<td>132.6</td>
</tr>
</tbody>
</table>
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4. Silk Reeling Technology
5. Silk Re-Reeling Technology

6. Fluidized Beds to Textile Processing

7. High Alpha Cellulose Pulp for Viscose Rayon

8. Reaction of Cellulose with Crosslinking Agents
9. Cellulose Ethers

10. Nitrocellulose

11. Dissolving Pulp for Rayon Industry

12. Anti-Crease and Antishrink Finishes for Viscous Rayons
13. Crease Resistance of Cellulose Textiles

14. Heat Treatment of Resin-Treated Cellulosic Textiles

15. Tone and Shade Control in Textiles

16. Chlorine Retention of Resin Treated Cellulosic Fibres
17. Printing Impressions

18. Textiles Adhesives

19. Flame Retardants for Textiles

20. Halogenated Flame Retardants
21. Antinomy and Other Organic Compounds

22. Surfactants

23. Chemical used in Textiles
Niir Project Consultancy Services (NPCS) can provide Process Technology Book on Textile Processing and Silk Reeling Technology (Fabric Varieties, Silk as Textile Fibre, Fluidized Beds to Textile Processing, Cellulose Ethers, Nitrocellulose, Printing Impressions, Surfactants, Flame Retardants for Textiles, Chemical Used in Textiles, Tone and Shade Control in Textiles, Crease Resistance of Cellulose Textiles)

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- We adopt a systematic approach to provide the strong fundamental support needed for the effective delivery of services to our Clients’ in India & abroad

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We bring deep, functional expertise, but are known for our holistic perspective: we capture value across boundaries and between the silos of any organization. We have proven a multiplier effect from optimizing the sum of the parts, not just the individual pieces. We actively encourage a culture of innovation, which facilitates the development of new technologies and ensures a high quality product.
<table>
<thead>
<tr>
<th>What do we offer?</th>
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<tbody>
<tr>
<td>○ Project Identification</td>
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<td>○ Detailed Project Reports/Pre-feasibility Reports</td>
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<td>○ Business Plan</td>
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<td>○ Industry Trends</td>
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<td>○ Market Research Reports</td>
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</tr>
</tbody>
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How are we different?

- We have two decades long experience in project consultancy and market research field
- We empower our customers with the prerequisite know-how to take sound business decisions
- We help catalyze business growth by providing distinctive and profound market analysis
- We serve a wide array of customers, from individual entrepreneurs to Corporations and Foreign Investors
- We use authentic & reliable sources to ensure business precision
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- Economic feasibility study of the Project
- Market potential survey/research
- Report Compilation

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- Embassies & Consulates
- Consultancies
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- Adhesives, Industrial Adhesive, Sealants, Glues, Gum & Resin
- Activated Carbon & Activated Charcoal
- Aluminium And Aluminium Extrusion Profiles & Sections,
- Bio-fertilizers And Biotechnology
- Breakfast Snacks And Cereal Food
- Bicycle Tyres & Tubes, Bicycle Parts, Bicycle Assembling
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- Building Materials And Construction Projects
- Biodegradable & Bioplastic Based Projects
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- Confectionery, Bakery/Baking And Other Food
- Cereal Processing
- Coconut And Coconut Based Products
- Cold Storage For Fruits & Vegetables
- Coal & Coal Byproduct
Sectors We Cover  cont...

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- Dairy/Milk Processing
- Disinfectants, Pesticides, Insecticides, Mosquito Repellents,
- Electrical, Electronic And Computer based Projects
- Essential Oils, Oils & Fats And Allied
- Engineering Goods
- Fibre Glass & Float Glass
- Fast Moving Consumer Goods
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Sectors We Cover

- Fruits & Vegetables Processing
- Ferro Alloys Based Projects
- Fertilizers & Biofertilizers
- Ginger & Ginger Based Projects
- Herbs And Medicinal Cultivation And Jatropha (Biofuel)
- Hotel & Hospitality Projects
- Hospital Based Projects
- Herbal Based Projects
- Inks, Stationery And Export Industries
Sectors We Cover

- Infrastructure Projects
- Jute & Jute Based Products
- Leather And Leather Based Projects
- Leisure & Entertainment Based Projects
- Livestock Farming Of Birds & Animals
- Minerals And Minerals
- Maize Processing (Wet Milling) & Maize Based Projects
- Medical Plastics, Disposables Plastic Syringe, Blood Bags
- Organic Farming, Neem Products Etc.
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- Paper And Paper Board, Paper Recycling Projects
- Printing Inks
- Packaging Based Projects
- Perfumes, Cosmetics And Flavours
- Power Generation Based Projects & Renewable Energy Based Projects
- Pharmaceuticals And Drugs
- Plantations, Farming And Cultivations
- Plastic Film, Plastic Waste And Plastic Compounds
- Plastic, PVC, PET, HDPE, LDPE Etc.
| Sectors We Cover |
|------------------|------------------|
| Potato And Potato Based Projects |
| Printing And Packaging |
| Real Estate, Leisure And Hospitality |
| Rubber And Rubber Products |
| Soaps And Detergents |
| Stationary Products |
| Spices And Snacks Food |
| Steel & Steel Products |
| Textile Auxiliary And Chemicals |
Sectors We Cover

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- Textiles And Readymade Garments
- Waste Management & Recycling
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- Water Industry (Packaged Drinking Water & Mineral Water)
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