



Bangladesh Textile Today

February 2021
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Year

**How Bangladesh's
textile and RMG faring
amid a global crisis**

**Duty-free market
access to China:
Bangladesh needs to
diversify products to
increase apparel
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**2021: Multi-dimensional
challenges for
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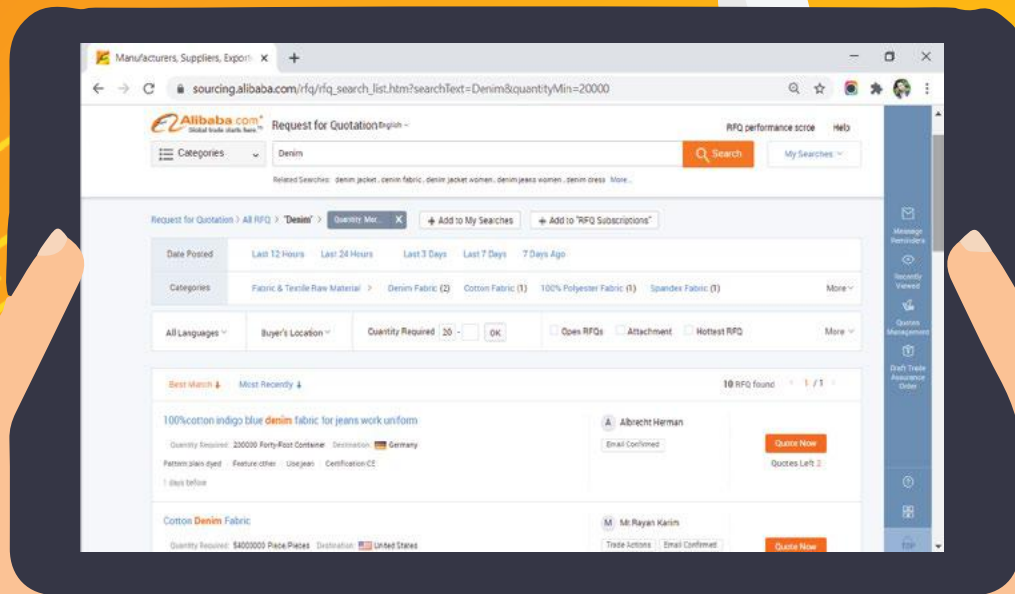
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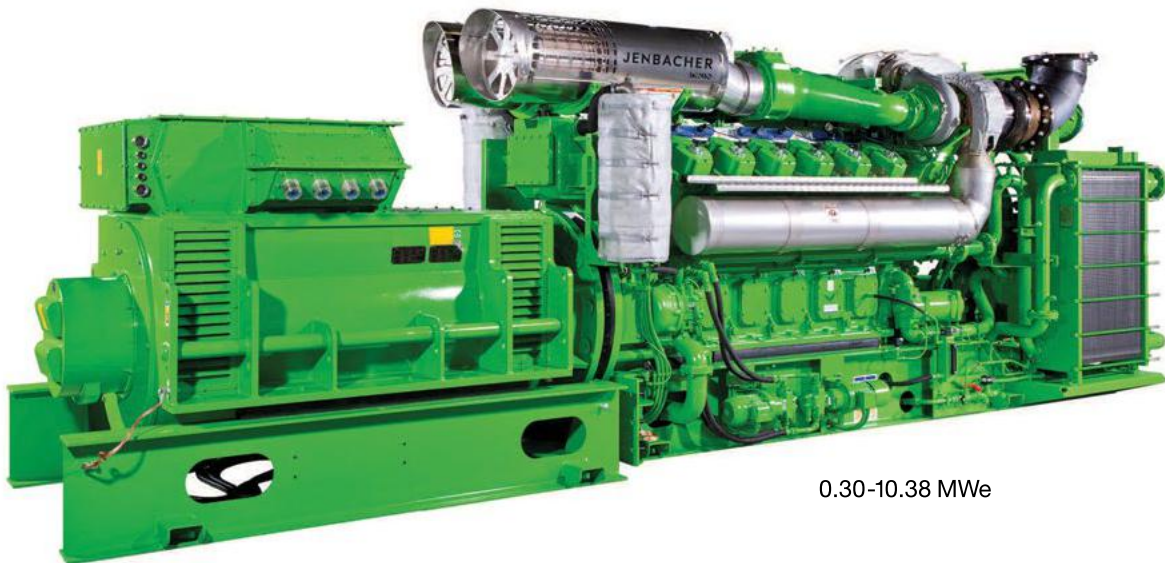


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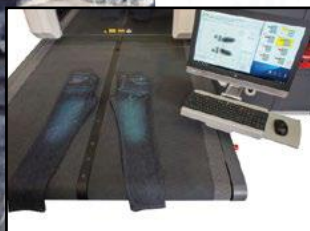
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2021: Multi-dimensional challenges for Bangladesh

Sayed Abdullah



After passing a nightmare time in 2020, 2021 is a year where local industries and businesses and especially the textile and apparel industry are not facing a smooth road of recovery ahead. Bangladesh is confronting some grave challenges in 2021.

The challenges have serious long-run effects in contrast to the issues around getting the readymade garment (RMG) out of the recession from the pandemic and dealing the end of COVID-19.

The each encounters pose difficult choices and challenges for the RMG industry.

Enhancing support

This challenge is a continuing one for Bangladesh. Over the past 30 years, RMG mostly produced basic knitwear items. The pandemic has taught the lesson in a hard way of diversifying the product basket quickly.

But it is not easy to shift the gear suddenly. As high-end apparel manufacturing need massive capital investment besides other backward linkage and other supports.

Here govt. can play a critical role. It can extend hand to:

1. Financial support
2. Lowering of bank interest rates and increasing repayment time
3. Ease of raw material import by reducing charges
4. Giving special care to backward linkage industry to encourage local capacity building
5. Creating more friendly environment for foreign investment
6. Reading the economic zones' for businesses

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RMG industry will have a strong footing in the global arena.

It is no wonder that competing countries are securing all fronts to increase their share of export, making it harder for Bangladeshi apparel manufacturers.

Economic experts in Bangladesh continually advice the government that the overall levels of investment must be enlarged to attain more rapid growth.

Obviously, ensuring investments will raise the value-added in the overall economy. Else, the business will go to competing countries as said above.

Right growth strategy

To achieve and maintain rapid growth and export, there is no alternative of having a diverse exporting destinations beside a wide array of garment range.

There are constant calls for diversification of exports and all kinds of actions to support the garment sector.

Bangladesh's trade economists have long explained that tax policies are biased against exports, but limited attention has been paid

to this important finding.

Three problems have to be solved to have successful export-led growth.

- Managing the exchange rate to attain an undervalued currency. Bangladesh is using export subsidies as a proxy for an undervalued exchange rate. This does not work very well and violates the World Trade Organisation trading rules as Bangladesh soon to be graduate in developing country (DC) status.
- The tariffs and VAT levied on imported raw materials to be used in the production of exports must be either not charged or easily and promptly refunded. For the non-garment sectors, the various methods do not work. Garment factories trying to shift to high-value products face many difficulties with customs as they important new fabrics and accessories. Unless government policy can manage this issue, there is limited hope of rapid export growth and diversification.
- Introduction of new technologies through FDI.

Bangladesh RMG's future depends on building human capital and textile education system

Human resources are the most precious for any nation to develop.

At present, the textile universities curricula lacks the real industry exposure for the textile students. Thus it is seen the quality of education is assessed by most as very unsatisfactory. Not only has the textile education, rather the whole education system of Bangladesh needed overhauling to cater the modern demands.

There are three objectives of a good education system:

- a. Provide a basic education to function in a modern industry
- b. Provide training in special skills needed in the economy particularly in the higher technology and engineering industries
- c. Develop widespread attention to science and mathematics to achieve an innovation led society.

Thus immediate attention is needed to solve this long overdue stigma.

Shasha Denims owns Italy based EOS Textile Mills

Rahbar Hossain

Foremost denim exporter of Bangladesh Shasha Denims has attained 18 percent shares of EOS Textile Mills -, a Bangladeshi subsidiary of Berto Industria Tessile of Italy - for Tk 210.79 million, taking its 98% possession.

Shasha also acknowledged getting two plots of 4,005.12 square meters at Dhaka Export Processing Zone (DEPZ) Extension Area from Bangladesh Export Processing Zones Authority (BEPZA) for future expansions.

In July-December 2020, Shasha's consolidated earnings per share was Tk 0.43 against Tk 1.02 for July-December 2019 while the consolidated net operating cash flow per share was Tk 0.52 and Tk

4.14 correspondingly.

Shasha Denims consolidated net asset value per share was Tk 41.17 as of December 31, 2020 and Tk 41.41 as on June 30, 2020.

Shams Mahmud, Managing Director, Shasha Denims said they had lately acquired the EOS, a subsidiary of Berto Industria Tessile of Italy, paying Tk 125 crore.

EOS Textile Mills manufactures woven discontinuous fabric for the high-end global market and is one of the rare factories in the world to make moleskin fabric, which is a very technical fabric, told Mahmud.

Also, it has an effluent treatment plant allowing the cleanest discharge in Bangladesh, Shams

Mahmud added.

The EOS management wanted to emphasize on their European manufacturing plants and picked Shasha for the likenesses they shared, said Mahmud.

This includes visions in research and development, high-end fabric production, corporate social responsibility activities and most importantly goodwill in the international market for quality, he added.

Shams Mahmud further added, "Also the EOS is the largest Italian investment in Bangladesh and it is a matter of pride that a Bangladeshi company has acquired it which shows how far we have come."

How Bangladesh's textile and RMG faring amid a global crisis

Textile Today Analysis

Bangladesh has regained its positive export growth in the RMG sector after unexpected negative growth due to coronavirus. Bangladesh is still the world's second-largest garment exporter. But when it comes to raw materials, the country is largely dependent on foreign countries. Also, Bangladesh still has to compete with lower production costs due to backward connection dependency. Bangladesh is the fifth largest textile importer in the world with a 3.10 percent share in the global textile import market. A competitive analysis shows that the overall business structure of the textile and RMG sector in Bangladesh is unstable.

Comparative analysis of Bangladesh's textile and RMG sector worldwide

Spinning industry

Yarn is the root of all textiles. BTMA has 450 spinning mills members. During April-October, yarn exports increased by 48 percent in Bangladesh. However, Bangladesh has lagged in demand. The total production of cotton in Bangladesh is 29.4 MT against the requirement of 1613.3 MT.

down drastically. So it has been relatively easy to turn around even during Corona's difficult times.

BTMA President Mohammad Ali Khokon said, "The textile sector has turned out very well. Although the purchase order has slowed down this November, the news of the vaccine has changed the tone of the buyers.

Purchasing orders have picked up again, adding that Corona has started pushing for better orders from August. It continued in September, October, and November. At present, there is no stock of yarn and cloth in the warehouses of export-oriented textile mills. Although there are some stocks produced for the domestic market, it is due to the change of seasons.

Bangladesh has enough spinning capacity with 257 spinning rotor machines, 11650 spindles short-staple spinning machine in (000' units). But in long-staple spindle spinning machines, Bangladesh has only 15 (000' units).

Table 1: Relative comparison of cotton production, consumption and spinning sector capacity in leading apparel manufacturing countries

Parameters	China	India	Bangladesh	Vietnam	Turkey
Cotton Production (1000 MT)	6041.8	6422.9	29.4	0.7	892.7
Cotton Consumption (1000 MT)	8600.1	5388.7	1613.3	1633.0	1480.5
Harvested Area (1000 Hectares)	3450	12700	44	1	560
Spinning Machines- Rotors ('000 unit)	2850	878	257	132	800
Spinning Machines- Spindles Long Staple ('000 unit)	3623	991.2	15	2	757.4
Spinning Machines- Spindles Short Staple Unit	1,00,000	52537.8	11650	6950	7900

Textile traders say that India is the biggest competitor of Bangladesh's textile yarn and other countries including China and Pakistan. Due to the lockdown, the import of yarn and fabric from abroad has come

The main shortcomings of the spinning industry in Bangladesh are its cotton consumption and harvesting areas are better than Vietnam but lag far behind China and India.



Figure 1: Main shortcomings of the spinning industry in Bangladesh are its cotton consumption and harvesting areas are better than Vietnam but lag far behind China and India.

Fabric industry

There are 650 weaving and 160 dyeing and finishing factories that are members of BTMA. From April to October, fabric worth Tk 6407 crore were exported with an increment of 3.62%.

Despite these exports, Bangladesh cannot meet its own needs. According to the latest figures from the World Trade Organization (WTO), Bangladesh imported US\$ 9.91 billion worth of textiles in 2019, up from \$11.0 billion in 2018. BTMA are providing 80-85 percent of the yarn required for knitwear and 35-40 percent of the required fabric for woven garments.

Mohammad Ali Khokon, President of the Bangladesh Textile Mills Association (BTMA), said, "Since we cannot meet the full demand, China and India can fill this gap," adding that we need to build 20 more textile mills. Local garment exporters will be able to supply quality fabrics."

Bangladesh has more capacity in shuttleless looms than India and Vietnam. However, Bangladesh needs to do more in shuttle weaving.



Figure 2: BTMA are providing 80-85 percent of the yarn required for knitwear.

RMG industry

Bangladesh's ready-made garments (RMG) returned to negative territory in October after a 44.63 percent year-on-year growth in exports. Exporters say falling commodity prices have also hurt the industry in the face of rising production costs. However, after a decline in the previous month of October, the country's merchandise shipments again in November this year showed a positive trend with low growth. The main reason for the change in exports is uncertainty.

"Of course we are worried - we need to monitor the situation carefully," said Rubana Huq, President of the Bangladesh Garment Manufacturers and Exporters Association (BGMEA), a lobby of garment exporters.

This situation is due to the second wave of coronavirus infection hitting America and Europe. Approximately 81.20% of the total exports come from the garment sector which is the top in the world. Bangladesh can fight enough against the competitors with a lead time of 60-70 days. Also, Bangladesh has the second largest number of garment workers in the world.

Table 3: Relative comparison of RMG's share in total exports, lead time and labor capacity in leading apparel manufacturing countries					
Parameters	China	India	Bangladesh	Vietnam	Turkey
Share in Textile in Total Exports	10.40%	11.20%	81.20%	15%	16.30
Lead Time (Days)	30-60	90-120	60-80	90-100	60
Labor Force (Textile & Apparel Industry) (million)	10	2.8	4.5	2.5	0.8

Moreover, Bangladesh needs evolution, not a revolution in the textile and RMG industry. The Bangladesh RMG sector still needs to improve its lead time and product quality. The Bangladesh textile industry has considerable potential to back up the RMG sector.

In addition to saving huge imports, the country also needs to develop the RMG sector-related backward linkage industries to create more employment opportunities for further development.

BTMA can meet the demand for 100% backward linkage for the RMG sector by investing TK 10,000 crore to build 20 new textile mills. The total investment in the textile sector is about \$0.8 billion (2020) while the total investment in India and China is \$1.2 billion (2020) and \$6.5 billion (2018).

Table 2: Relative comparison of weaving machine capacity in leading apparel manufacturing countries					
Parameters	China	India	Bangladesh	Vietnam	Turkey
Weaving machines -Shuttle Looms ('000 units)	345	45.5	17.2	15	20
Weaving machines -Shuttle-less Looms ('000 units)	835	22.8	33.8	6.8	49.5

Duty-free market access to China: Bangladesh needs to diversify products to increase apparel exports

Textile Today Analysis



Figure 1: On June 16, 2020, the Chinese government announced the duty-free export facilities for 97% of its tariff line.

Despite having extended duty-free market access facilities to the Chinese market, Bangladesh's apparel exports to the country declined by 32.72% to \$163.30 million during the July-January period of the current fiscal year.

On June 16, 2020, the Chinese government announced the duty-free export facilities for 97% of its tariff line.

With the announcement, a total of 8,256 Bangladeshi items are now eligible for zero duty facilities in the Chinese market effective from July last year.

According to Export Promotion Bureau (EPB) data, during July-January, the first seven months of the Fiscal Year 2020-21, Bangladesh earned \$163.30 million, down by 32.72%, exporting clothing products to the Chinese markets. In the same period last year,

Bangladesh earned \$242.73 million.

As per the data, Knitwear products recorded a 22.76% negative growth to \$77 million, which was \$99 million in the same period of the previous year.

Woven products earned \$87 million, down by 39.61%, which was \$143.50 million a year ago.

However, the country's total export earnings from China declined by 9.57% to \$388 million during the July-January period of FY21, which was \$429 million in the same period a year ago.

Major export goods to China include apparel goods, jute and jute products, rawhide and skins, plastic products, live and frozen fish and crabs.

Talking on the issue, industry people and economists blamed limited product baskets, while exporters are

yet to get a clear notion about the items that are included in the duty-free market access list.

"It was expected that Bangladesh exports to China will see a rise with the effectiveness of new duty-free market access facilities but it did not happen as expected. This was because of the lack of a diversified product basket," Khondaker Golam Moazzem, Research Director at the Centre for Policy Dialogue (CPD) told Textile Today.

"In addition, COVID-19 pandemic impacted the exports, which is another reason for the decline."

To capitalize the duty-free market access, exporters have to be clear about the products included in the new list of tariff-free access to China, while the government has to provide the data on the prospects market opportunity, said the economist.

“

In the new list of duty-free market access, there are more items than that of the past and it is an opportunity for Bangladesh to grab more share in the Chinese market,

**Abdus Salam Murshedy
President, Exporters Association of
Bangladesh (EAB)**

”

Based on the findings, exporters have to develop a wide range and diversified as well as value-added products. Customers' demand and their fashion trend should be taken into consideration in developing products, said Moazzem.

Besides, a 40% value addition by Bangladesh to the product's price is a barrier in cashing the opportunity. To reap the most benefits, the government has to negotiate with the Chinese government to liberalize value addition conditions, he added.

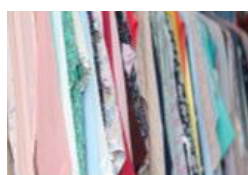
However, the exporters opined that Bangladesh could not cash the opportunity as the pandemic hit the exports when the duty-free market access came to effect.

"In the new list of duty-free market access, there are more items than that of the past and it is an opportunity for Bangladesh to grab more share



Bangladesh's apparel exports to China declined by

32.72%
to \$163.30 mn



Knitwear products export downed by

22.76%
to \$77 mn



Woven products export downed by

39.61%
to \$87 mn

Figure: July-January FY 2020-21 apparel export scenario of Bangladesh in China.

in the Chinese market," Abdus Salam Murshedy, president, Exporters Association of Bangladesh (EAB) told Textile Today.

Since the COVID-19 pandemic hit the country's exports and the supply chain was disrupted, we could not tap the opportunity. But we are hopeful to take the duty-free market access advantage with the return of normalcy in the economic activities, said Salam, also a former president of Bangladesh Garment Manufacturers and Exporters Association (BGMEA).

On top of that, it would take time to be familiar with the new items and connect new buyers. By this year, Bangladesh will be able to take the advantage of the duty-free market access, he added.

Bangladesh also needs to attract Chinese investment in grabbing the market share as it would help to move toward value addition and to produce products beyond traditional ones.

We need to make products that the Chinese consumers want to buy and this new investment is crucial. To this end, Chinese investment can help Bangladesh to a great extent, Dr. Zahid Hussain, former lead economist of the World Bank, Dhaka told Textile Today.

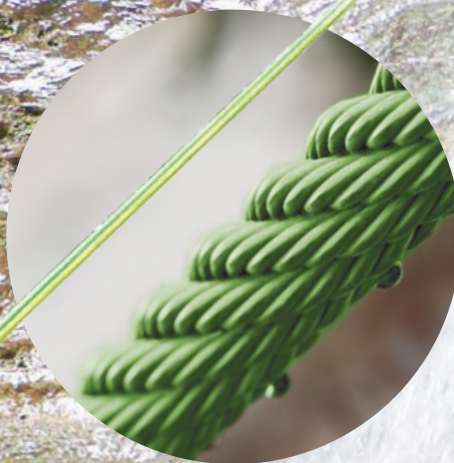
For example, we can attract more investment in manmade fiber and high valued products as the Chinese investors have experienced in these segments. If we can do it, it would help the local manufacturers to learn experience through knowledge sharing, said the economist.

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Bangladeshi garment price falls sharply compared to Vietnamese

Rajon Saha

According to a study by the Centre for Policy Dialogue (CPD), Bangladeshi readymade (RMG) items have seen a sharper fall in prices compared to the Vietnamese products in the European Union and US markets.

The value of 100 kg of made-in-Bangladesh cotton fibre T-shirt dropped by 1% year-on-year to 1,091.5 euros in 2020.

Whereas the CPD study found that the same category product manufactured in Vietnam saw a 3% price rise, reaching 2,157.9 euros last year.

Equally, the price of each 100 kg of women or girls' cotton fibre pullover made in Bangladesh reduced by 7 percent year-on-year to 1,329.5 euros in 2020 whereas the price of the Vietnamese ones remained unchanged at 2,157.8 euros.

The prices of each 100 kg of Bangladeshi man-made fibre pullovers for women and girls fell by 6 percent to 1,319.4 euros from 1,409.6 euros in 2019 at the EU markets. Still, the Vietnamese variant has seen only a 3 percent year-on-year price fall, hitting 1,906.2 euros in 2020.

In the US market, the price of a dozen of Bangladeshi T-shirts



Figure: Value of 100 kg of made-in-Bangladesh cotton fibre T-shirt dropped by 1% year-on-year, whereas the same category product manufactured in Vietnam saw a 3% price rise.

made from cotton fell by 20 percent to \$17.99 in 2020 from \$22.43 in 2019 while the price of the same product made in

Vietnam dropped by 17 percent to \$31.9 in 2020 from \$38.2 in 2019.

The price of a dozen of Bangladeshi made sweaters and pullovers

Prices of apparel in EU market: Bangladesh vs. Vietnam				
EU market (In Euro)	Bangladesh		Vietnam	
	Y2020	Change % (YoY)	Y2020	Change % (YoY)
T-shirts	1091.5	-1%	2157.9	3%
Women's/girls' jerseys, pullovers, cardigans (cotton)	1329.5	-7%	2157.8	0%
Women's/girls' jerseys, pullovers, cardigans (man-made fibres)	1319.4	-6%	1906.2	-3%

dropped by 2 percent to \$39.31 in 2020 from \$40.23 in 2019.

Nevertheless, the prices of the same Vietnamese product remained stable at \$47.1 in 2019 and 46.9 in 2020.

The price of a dozen of Bangladeshi made trousers for women and girls made from cotton fibre dropped by 12 percent to \$64.17 in 2020 from \$72.88 in 2019 while its Vietnamese variant has seen only a 6 percent price fall, reaching \$84.6 in 2020 from \$90.5 in 2019.

Bangladesh's apparel export performance was driven by both volume and value factors, according to the CPD study. Exchange rate management is emerging as a vital factor, driving export competitiveness, CPD said.

The CPD also said the export target set for fiscal 2021 to achieve

dynamics, the CPD said in its State of the Bangladesh Economy in FY20-21.

The trade balance further weakened in FY2020 with a faster fall in exports (-16.9 percent) compared to fall in imports (-8.6 percent).

However, the scenario reversed in FY2021, when over the first half of the fiscal year, imports fell at a faster pace (-6.8 percent) than exports (-1.1 percent), leading to some improvement in the trade balance.

Thanks to the continued robust flow of remittances, the balance of payments position at the end of the first six months of FY2021 in December 2020 shows significant improvement.

However, the overall scenario hides a diverse range of undercurrents and many narratives, with the level of export earnings lowering,

stay challenging for us at least till the 3rd quarter of this calendar year.

"It's not the export market and demand only which will determine the performance of export, but the worrying financial situation of the factories here is to be factored in to assess how long it would be possible for individual enterprises to withstand the prolonged shock," Huq added.

Huq also said that the garments sector has had a consecutive downturn in export in December by 9.64 percent, which wrapped up the annual export performance for 2020 with an unprecedented fall of 16.94 percent.

In December of 2020, woven garment export posted the worst performance since June 2020, as it dropped by 18.07 percent.

Thanks to the demand for apparel for home use, the knitwear export managed to have a comparatively stable position with -0.45 percent growth in December.

While looking at the two years' trend, it shows that growth between October 2018 and 2020 was -26.03 percent, and November 2018 and 2020 was -14.32 percent.

"The 2 years change in export for December is -8.55 percent, meaning that we exported 8.55 percent less in December this year compared to what we exported in December 2018," Huq added.

"So, given the effect of lockdowns in Europe and the USA and their impact on retail and demand, the worst ever Christmas sales the world has seen, and most of all the effect of price decline, which is around 5 percent since September 2020, it was a dark year for the industry," she said.

As the doubts and stresses caused by the second wave persist coupled with the relatively poor administration and unavailability of a vaccine, and the impact on the global economy it would leave, this downtrend in export will probably continue till April of this year, said Huq.

Price dynamics of apparel in US market: Bangladesh vs. Vietnam				
US market (In USD)	Bangladesh		Vietnam	
	Y2020	Change % (YoY)	Y2020	Change % (YoY)
T-shirts	17.99	-20%	31.9	-17%
Sweaters, pullovers (cotton)	39.31	-2%	46.9	0%
Women's/girls' trousers	64.17	-12%	84.6	-6%

21 percent growth over fiscal 2020 will not be achieved.

It will take some time to even reach the pre-COVID export level of \$40.5 billion.

Knitwear has performed better in the July-January period of FY21 (+3.8%) compared to Woven wear (-10.9%).

Jute and jute goods (+27.1 percent) and home textiles (+44.3 percent) have posted robust growth.

The global demand for manmade fibre apparel and synthetic leather products are rising at a fast pace.

There is a need to revisit the incentive regime given new export products and export market

continued slow performance in case of import payments and the backdrop of continued healthy performance of remittances, the CPD study said.

Rubana Huq, president of the Bangladesh Garment Manufacturers and Exporters Association (BGMEA) recently said, "As far as the forecast of 'positive growth' is concerned, we would need to calculate the growth of 2021 based on the export figures of 2019 since 2020 was an abnormal time to compare export."

She added that it is tough to forecast the future of our exports in the backdrop of the present unstable situation but things may

Developing infrastructure for a competitive business environment in post-LDC

S N Abdullah

Progress of physical infrastructure, upgrading of the business environment and labor productivity and technical implementation are crucial in making Bangladesh viable in international trade by counterweighing the developing country (DC) graduation from least developed countries (LDC).

In this regard, the General Economics Division (GED) said in a study report, "Better infrastructure and labor productivity will lessen the costs and smoothen the business in the post-LDC period."

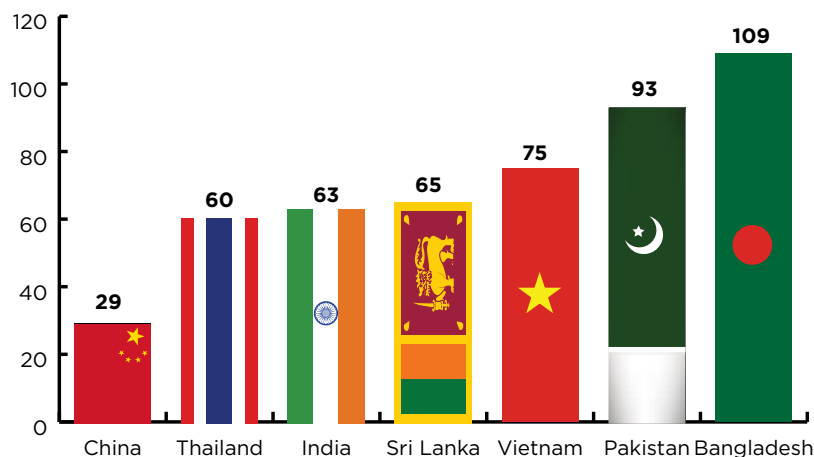
The arm of the Planning Ministry did the study named 'Impact assessment and coping up strategies of graduation from LDC status for Bangladesh' as Bangladesh is poised to graduate from the group of the LDC in 2024.

The study emphasized that



Figure 1: Better infrastructure and labor productivity will lessen the costs and smoothen the business in the post-LDC period.

Ranking in infrastructure
Source: Global Competitive Index 2018



although the government must be praised for growing the number of power plants to 108 in 2020 from 27 in 2009, most of them are in a minor scale.

Keeping in mind the increase of likely demand for electricity to 34,000 MW by 2030, the govt. is planning to invest around US\$70 billion in the power sector over the coming 15 years.

Time needed to get electricity

Source: World Bank; doing business 2019



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Nepal	70
Philippines	37
Singapore	30
Thailand	30
Vietnam	31

It is of utmost vital that this investment is built on using low-cost options and renewable energy to the degree of technically conceivable to cut the cost of electricity, safeguard the sustainability of primary energy supply and cut carbon pollution. Suitable pricing of primary energy will be of serious importance.

Besides, importance will also have to be given to power transmission and distribution, upgrading of grid capacities, and energy trade in the wider area.

The GED report highlighted the present road network was insufficient to deliver infrastructural support to a country with a people of more than 160 million and that is ambitious to become a high-income country in 2041.

In international connectivity, Bangladesh is given a score of 34.3 out of 100 and a ranking of 121th out of 140 countries. The quality of roads is also measured to be below average, with a score of 3.1 out of 7 and a rank of 111th out of 140.

Meaning the export competitiveness can be badly affected by the high cost of business, equally for imports of raw materials and capital goods and exports of products."

The status of effective, low-cost trade logistics is now well-recognized as a vital factor of export competitiveness.

Bangladesh is ranked 100 out of

160 countries in the Index of Trade Logistics Performance (LPI) of the WB, much behind China, Thailand, India and Vietnam.

The report said, China, Vietnam and India are the main competitors of Bangladesh for readymade garments (RMG) in the European Union, and the higher cost of trade logistics may have grave opposing costs for maintaining market share post-LDC graduation.

When Bangladesh graduates from the LDC group, surely the competitiveness challenge will deepen. And to preserve the market share in the more competitive environment, it will be significant for companies to have timely and less costly access to raw materials, uphold production schedules and ship products to their buyers on time.

Vessel turnaround time and cargo clearance from container yards at the Chattogram port, which handles 75% of Bangladesh's US\$90-billion international trade, are longer than the most ports in the region. Reforms should be done to improve the efficiency of the Mongla port.

Moreover, after holding dialogue with all shareholders, decisions should be taken as to whether some of the handling operations in the ports of Chattogram and Mongla should be contracted out to private entities, the report said.

Despite progress with the policy environment for the private sector that has spurred the expansion of private investment from a low of 6 percent of GDP in the fiscal year of 1988-89 to 23 percent of GDP in FY2018, the overall investment climate for Bangladesh remains substantially weaker than those found in competing countries.

This is echoed in the international rankings of investment climate prepared by the WB as well as by the World Economic Forum. The WB 2020 Ease of Doing Business ranks Bangladesh 168th out of 190 countries.

Bangladesh has taken some constructive steps to address the serviced land restraint through industrial parks and special economic zones.

"This is a welcome move. Speedy completion of all ongoing facilities and making them available in a timely and business-friendly way will be an important factor to spur domestic and foreign investment," the GED report said.

"Bangladesh should focus on reducing the time it takes to get electricity, register property, obtain credit, trade across borders, enforce contracts and resolve insolvencies."

Export expansion and diversification are often constrained by limited domestic capital, technology and market knowledge.

The foreign direct investment (FDI) with their better technological and managerial skills and knowledge about international marketing conditions is expected to improve the productivity and export performance of host country firms.

It has been claimed that Bangladesh needs to get on the bandwagon of the global value chain (GVC) as a means to export-oriented industrialization.

Cross-border FDI flows have been the lifeline for the growth of GVC trade that helps sustain the growing production networks across borders.

Bangladesh's record in mobilizing FDI is disappointing, the GED said.

FDI in Bangladesh reached \$2.2 billion in 2017, as compared with \$134 billion in China, \$40 billion in India and \$14 billion in Vietnam.

At present, Bangladesh faces the dual challenge of mobilizing more FDI and integrating it into the GVC operation.

Its greatest chance of receiving on the GVC bandwagon lies in aggressively courting FDI from conglomerates that are seeking

low-cost places for producing parts and components or for final assembly within the outline of cross-border production integration.

FDI thus becomes critical for Bangladesh not only to develop a wider base of intermediate goods industry but also to diversify exports into intermediate goods by vertically integrating with cross-border production entities.

Bangladesh needs to transform its RMG experience with GVC on to other areas such as footwear and leather goods, electronics, light engineering, toys, and plastics with an aggressive strategy of FDI-driven GVC over the sequence of the next decade.

Bangladesh is plentifully gifted with low-cost labor that delivers the basis for qualified benefits in

producing and exporting labor-intensive products.

Certainly, the RMG upheaval is a major example of how Bangladesh has grown global market share based on low labor costs. Yet, it is also known that labor productivity in Bangladesh is very low.

The report pointed that a key challenge in the post-graduation world for Bangladesh would be to raise labor productivity through big investments in human capital and other policy changes. This possibly holds the crucial to successful graduation from LDC status.

Utilizing land, employing labor and investing capital away from agriculture to industry is not sufficient if the labor force is not trained and productive.

Bangladesh has made significant inroads in enlightening human capital as suggested by promising human development pointers relative to comparators at the same level of development.

The superiority of the labor force in terms of skills is also low on average though the government started the National Skills Development Policy to increase the capabilities through spreading the extent of technical and vocational education and training.

Constructing on the development achieved in basic education and consolidation of other levels of education, including vocational and higher education are important to have a well-educated and skilled population with the capacity to contribute effectively to the country's development.

Kazi Md. Elias receives CText FTI

Hasnat Kakon

Kazi Md. Elias Chief Operating Officer, Textile Testing Services Ltd., DBL Group has recently qualified and awarded the Fellowship CText FTI from the Textile Institute, Manchester, UK. This fellowship is a chartered professional qualification that is awarded under the Textile Institute's Royal Charter.

This award is for the highest level of professional knowledge and experiences related to fibers and fabric; clothing and footwear; interior and technical textiles. This fellowship is covered by the European Union's First Professional Qualifications Directive (89/48/EEC) for a major personal creative contribution.

Md. Elias completed his B.Sc. from Bangladesh University of Textiles (BUTEX). Md. Elias started his career in 1993 and worked in different national and multinational companies.

With 28 years of national

and multinational experience in multidirectional textile sectors; spinning – operational management, production planning and quality, fabric and garment inspection, textile testing laboratory. Having a good academic background with a proven track record.

Kazi Md. Elias is a member of ITET, Fellow member of IEB (Institution of Engineers, Bangladesh), a Member of ASQ (American Society of Quality), a Life member of BSTQM (Bangladesh Society for Total Quality Management), Life Member of Bangladesh Textile Today Journal, Senior Member of AATCC (American Association of Textile Chemists and Colorists), Member of Technical Committee (TC) nominated by Bangladesh Accreditation Board (BAB), Lead Assessor – Trainee and Technical Assessor of ISO/IEC 17025:2017 nominated by Bangladesh Accreditation Board (BAB).



Figure: Kazi Md. Elias has recently qualified and awarded the Fellowship CText FTI from the Textile Institute, Manchester, UK.

CText FTI is the Textile Institute's first professional qualification awarded for a major personal creative contribution in the field of Textiles [Directive 89/48/EEC].

The Textile Institute is a professional body for those engaged in clothing, footwear, and textile's whose headquarters are at Manchester, UK.

Home textile exports shine defying pandemic

Textile Today Analysis

At a time when the country's apparel exports are going through a negative growth, shipment of home textile products rose sharply amid the ongoing pandemic defying all odds.

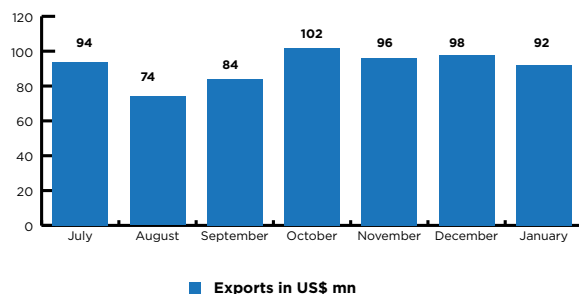
As per Export Promotion Bureau (EPB) data, during the July-January period of the current fiscal year 2020-21, Bangladesh earned \$639 million, up by 44.34% compared to \$443 million in the same period of last fiscal year. In the FY20, the sector brought \$759 million home.

On the other hand, exports earnings from the RMG sector fell 3.44% to \$18.40 billion during July-January of the FY21, which was \$19 billion in the same period of last year.

Of the total earnings, bed, kitchen toilet lines earned \$305 million, which was \$267 million in the same period last year. Other products earned \$334 million.

Home textile products include bed linen, bed sheet and other bedroom textiles, bath linen, carpets and rugs, blankets, kitchen linen, curtains, cushions and cushion cover and covers for quilts.

Bangladesh Exports of Home Textile in FY20-21
(Source: EPB)



As per the data, the United States of America imported home textile products worth \$156 million, the highest, followed by Germany 68.5 million, India \$60 million, United Kingdom \$58 million and Canada \$48 million.

Why home textile exports rose

"The sales of clothing products fell in retail stores in the European and American markets due to the COVID-19 pandemic. As a result, exports of apparel goods also declined but the shipments of home textile increased," said Rashed Mosharraf, General Manager for Marketing and Head of Operations of Zaber & Zubair Fabrics.

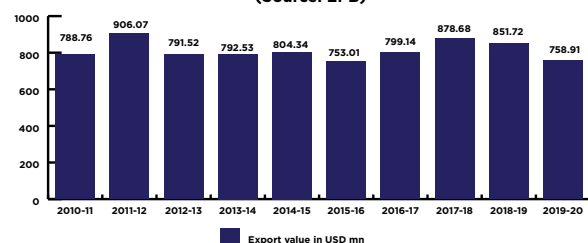
This is because of the rise of demands fueled by increased use of the items.

Since Bangladesh has quality products at affordable prices, exporters have been able to take the advantage of higher demands, he added.

"We have strong backward linkage for the home textile sector and manufacturers are capable of meeting the demands of raw materials from domestic sources. That is why, amid the pandemic, the supply chain here in Bangladesh was not disrupted fully," Bangladesh Textile Mills Association (BTMA) president Mohammad Ali Khokon.

However, the rise in cotton price is a threat to sustaining growth. For the sake of the sector the buyers should adjust the prices of products already placed as the cost of raw materials went up, he added.

Bangladesh's global home textile export
(Source: EPB)



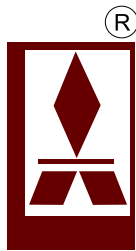
"While the apparel exports were in sliding mode amid the pandemic, the rise in exports earnings from home textile is inspiring for the exporters. The growth is very significant for Bangladesh's economy and it needs to retain for sustainable export-led growth," Center for Policy Dialogue (CPD) research director Khondaker Golam Moazzem told Textile Today.

In the present context, it is clear that a diversified export basket will be very crucial for the development of our economy which is reflected during the COVID-19 pandemic crisis, said the economist.

The government should revisit its policy towards the promising sector to diversify the export basket and to reduce dependency on few items, said Moazzem.

On the other hand, manufacturers should explore new areas to sustain the growth and focus should be given on non-traditional markets, he added.

"The growth is laudable and the credit goes to our resilient entrepreneurs, who are very passionate and dedicated towards the development of the sector," M Shahadat Hossain, Chairman of Bangladesh Terry Towel and Linen Manufacturers and Exporters Association (BTTLMEA) told Textile Today.



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Threats and opportunities of yarn business in Bangladesh

Engr. Md. Rashedul Hoque

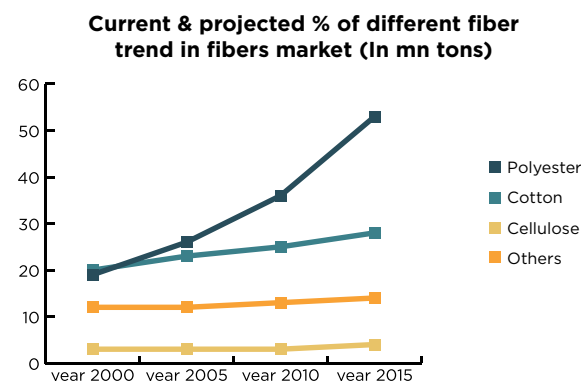
For the last 4 or 5-months Bangladeshi spinners are having an upward trend after a year of calamity in COVID-19. Following the trend, many investors are planning to set up a new spinning factory or increasing capacity. There is indeed a huge gap between total yarn requirements for Bangladesh's readymade garment (RMG) industry and the capacity of local spinners'. Which has been fulfilling with imported yarn.



Figure 1: As the imported yarn price – mainly from China and India – are much cheaper, local spinners are always fighting in yarn market to keep their prices down.

As the imported yarn price – mainly from China and India – are much cheaper, local spinners are always fighting in yarn market to keep their prices down. Spinners are really worried about cheap Indian yarn flooding the market, especially for 100% cotton yarn.

The situation is so grim that 100% cotton yarn business in Bangladesh are now totally depends on Indian yarn business strategy. In last two year, India sold their huge stock of cotton fiber in Bangladesh



converted into yarn due to lack of demand in China market (trade war impact) and good cotton production. That is why yarn price was too cheap and we local spinners grieved to survive.

We know in spinning raw material contributes around 60-70% of the total cost, so if we can't play with the spinning process of raw materials then it is tough to survive. We can consider the below points for 100% cotton yarn business:

Oppositely, if we think about different fiber yarn like Natural, Synthetic, Regenerated yarn, or blended yarn then beneficial for small factories like 50,000 Spindle. This unit will be customized with customer requirements. The positive side of this type of this kind of Spinning Mill is ...

- 3 or 4 product lines can be used for running different processes at a time.
- Possible to minimize raw material cost during blending by considering fiber properties against required yarn quality.

Minimum 2/3 Ring spinning unit required (per unit like 50~60 thousand spindle capacity) with Rotor Unit. Small factory-like 50,000 spindle not suitable for 100% Cotton yarn business at this moment due to higher overhead cost.

2 product lines per unit are required in Blow room for proper mixing plan to minimize the fiber cost and maximize the use of all properties fiber according to end product category.

Need to maintain a minimum 6 month or more stock of fiber to take the benefit of the lower market price or good quality fiber in fiber season. Also need to fix the target of average fiber price on a specific year basis during fiber purchase all over the year.

Need to ensure of wastage use in Rotor process or use for pre-recycle cotton yarn.

Figure 2: Consideration points for 100% cotton yarn business in Bangladesh.

Indian yarn is highly subsidized & they're providing very competitive prices

China providing direct cash returns to exporters on fabric export to BD.

Making a direct threat to synthetic blended yarn

Buyer's nomination habits for yarn source from abroad

BCI, Organic yarn requirements are increasing but shortage of good quality fiber

Figure 3: Threats for Bangladeshi yarn business.

- Facilitate to change the product line with market demand to continue smooth business all over the year with market trend.
- Partnership business can be possible with few fixed customers by supporting them with all kinds of yarn.
- These kinds of yarn not buying from abroad due to small requirements from buyers.
- Fibre dyed yarn and Recycle yarn requirements are increasing day by day. Here is the possibility to pick the market.

Current and projected percentage of different fiber trend in the fibers market

Also, we have to consider below threats in the yarn business, which is already we are facing and gradually new challenges are coming due to business mechanism by other's country and end buyers:



Need to grab sweater market, which is importing yarn to meet demand



Capturing growing woven fabric industry



Filament yarn, ACY, sewing thread market holds a lot of prospect



Re-cycled yarn business has a new opportunity

Figure 4: Opportunities to develop Bangladesh's yarn business.

- Indian yarn is highly subsidized as their government provides incentives in the cotton purchase and production of yarn at the mill level and incentives for export yarn. As a result India now providing very competitive prices all over the year.
- The news source stated that China is providing direct cash returns to exporters of about 15 to 20% on their export of fabric to Bangladesh. This is a direct threat to synthetic blended yarn.
- Recently Indian Secretary said in the media that "we will have an agreement with Bangladesh to supply fabric and yarn to them and they will make the apparel and export it". If it is done then we will lose one portion of the total yarn market.
- Buyer's nomination habits for yarn source, especially from abroad.
- BCI and Organic yarn requirements are increasing but a shortage of good quality BCI and Organic fiber.

But we have the opportunities to develop our local yarn business in other's way

- There is a huge market in the sweater industry. At this moment they are buying maximum quantity from abroad. We need to focus on the sweater market.
- The woven fabric industry is growing day by day. This is also a big market.
- Filament yarn, ACY (air covered yarn), sewing thread all are coming from India and China. Need to check the possibility to pick these markets.
- Re-cycle the yarn business is a new opportunity. We have good raw material (garments wastage, spinning wastage) source to take full advantage of this yarn business.

Finally, we need mutual support from BGMEA, BKMEA and BTMEA for business projection, scope and future demand to develop the yarn business in a statistical way for sustainable business. Also need a regular study on our capacity, market demand, obstacles, and future opportunities. If required need to develop a specialist team for that.

Author



Engr. Md. Rashedul Hoque

Asst. General Manager
(Marketing & Planning)
AL-HAJ KARIM TEXTILES LTD

Denim exports in US: A strong arena for Bangladesh RMG

Textile Today Analysis

Amid the COVID-19 blow in Bangladesh's RMG industry in 2020, denim segment fared surprisingly well. Beating all odds. Holding the top supplier position for blue denim apparel to both the US and EU.

Not to mention, Bangladesh has been the largest exporter of jeans clothing to the EU (including the UK) for the last few years, according to Eurostat data. Generating US\$1.6bn (EUR1.31bn) in denim exports in 2019.

According to US trade data, Bangladesh was also the major external supplier of denim to the US by value in 2020, nudging out Mexico.

Meanwhile, exports to the US, enlarged by 3.47% year-on-year in 2019 to US\$585.54 million, according to US Office of Textiles and Apparel (OTEXA) figures.

While according to just-released trade data slid 4% to US\$561.3 million in 2020.

In volume terms, Bangladesh holds the biggest market share of 23.8% after exporting 7.13 million dozen pairs to the US last year.

Sustainable denim practices in BD

Bangladesh has some of the best LEED certified factories with state of the art green facilities. Leading this growth story, Shasha Denims Over the past year has reinvested, expanded and in 2019 acquired EOS Textile Mills, then the Bangladesh unit of Italy's Berto EG Industria Tessile.

Shams Mahmud, Managing Director, Shasha Denims said, "In the last 12 months, we have invested US\$23.5million mostly into the value addition of machinery."



Figure 1: According to US trade data, Bangladesh was also the major external supplier of denim to the US by value in 2020.

Also, Shasha Denims last year launched eco-friendly denim fabric sourced from recycled plastic waste for some Scandinavian brands, such as Legends. Even smaller players are thriving. For instance, Chittagong-based Denim Expert bagged the World Economic Forum's New Champion Award in November.

The Geneva-based forum picked Denim Expert for its "exemplary sustainable practices and initiatives to promote inclusivity," including creating employment for transgender population and human trafficking survivors.

Growth opportunities

Dr Rubana Huq, President of the Bangladesh Garment Manufacturers and Exporters Association (BGMEA), stresses that even though Bangladesh is a leading exporter, it still has "tremendous opportunities" in a world denim market valued at over US\$65bn prior to Covid-19.

Dr Huq says sales could increase by diversifying product range away from bottoms into tops and lifestyle items such as faded jeans, sweatshirts, activewear

and ladies' stretch denims. With more than 30 modern mills in the country supplying half of the current demand for fabric by export-oriented denim garment producers, backward integration is solid, offering reliability in supply chains, she adds.

Other Bangladesh manufacturers producing denim products include Pacific Jeans, Beximco, Pioneer, Ananta, Envoy, Square, Ha-Meem, the Standard Group and Argon.

Capacity challenges

Such movement is especially important given some major manufacturers have struggled with denim sales during the COVID-19 pandemic. Last year, for example, the Ananta Group slashed its denim production capacity from 3 million pieces to 2.8 million.

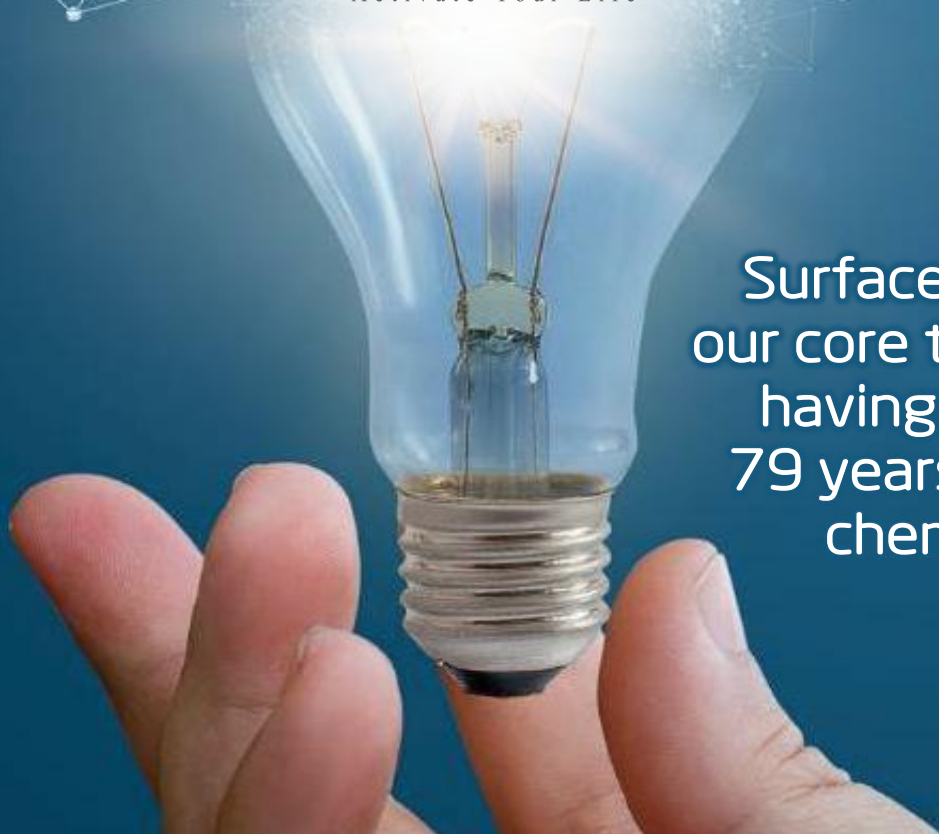
Although its export volumes had been increasing, slumping prices caused by the Covid-19 pandemic prompted Ananta, which has focused on more innovative products, to scale down its capacity.

"We won't do anything new before June," said Sharif Zahir, Managing Director of Ananta Group.

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Highlights on RMG resilient and sustainable recovery from COVID-19 crisis

US Shampa

The RMG export-oriented apparel enterprise in Bangladesh had adjusted astonishing changes during the crisis and made some significant leaps. This also shows the industry's adaptability and resilience with the emerging challenges to cope with the measures. Progress in tackling the uncertainty is growing higher due to the recovery of the economy and vaccination. Collaborative efforts are now necessary for 'Reimagining Sustainability' by the International and National authorities.

Entrepreneurship Development (CED) of Brac University for understanding the resilience and recovery of RMG sector in the last months.

Their approach is to 'build back better' risk management strategies that work as protective measures and provide a level playing field for any large-scale crisis.

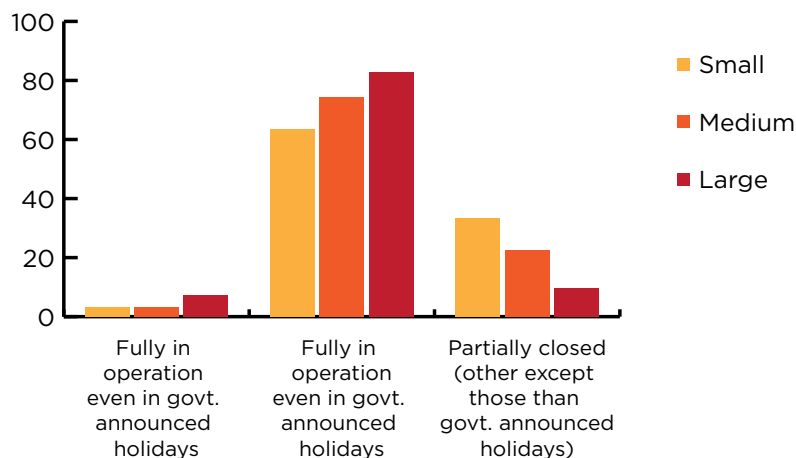
To mitigate the uncertainties a 'resilience index' is intervened including three components: robustness, recovery and resourcefulness, the study focuses on four major industrial clusters

from the Department of Inspection for Factories and Establishments (DIFE). 33.23% of the small factories remained partially closed during the pandemic. The number was higher in the case of medium-sized factories as well. 10% of the large factories were partially closed.

Over 50% of the offices had ongoing business with a limited number of buyers. Around 7.0% of the small enterprises, 7.1% of the medium enterprises and 12.0% of the large enterprises were dependent on a single buyer. Depending on a single source is a major sign of weakness, resulting in catastrophic outcomes.

Most factories scaled down their operations by more than 10%. The average number of workers per factory came down to 790 in September 2020, which was 886 in December 2020. Enterprises laid off 2.7% of their workers that could be as high as 13.95%, making 3.57 lac workers unemployed. 33% of factories have a lower share of female workers than the pre-pandemic period that portrays rising vulnerability for women.

Operational status of factories during COVID-19 period (size wise)



Researchers are focusing on the level of shocks and vulnerabilities in the ready-made garment (RMG) sector from the beginning of the epidemic by highlighting the resilience and recovery capacity from the novel impediments.

A project titled 'Vulnerability, Resilience and Recovery in the RMG Sector given COVID Pandemic: Findings from the Enterprise Survey' was introduced by the Centre for Policy Dialogue (CPD) and Mapped in Bangladesh (MiB) under the Center for

- Dhaka, Gazipur, Narayanganj and Chattogram. 3211 listed RMG enterprises, 610 sample enterprises were included in the survey. Primarily the sample covered 82% member and 18% non-member enterprises, and 54% can be considered small enterprises, 40% medium and 6.7% large.

96.4% of the factories were closed during the "official holiday" period enacted by the government; though few large, medium and small factories were in permission

Table: Resilience Index

	Overall (out of 100)
RI: Resilience Index	43.4
Pillar 1: Robustness	38
Redundancy	60.5
Prevention/Mitigation	40.3
Maintaining Key Functions	13
Pillar 2: Resourcefulness	44.9
Training Exercises	54.9
Protective Measures	53.6

Awareness	66.2
Alternative Sites	18.7
New Resources	30.7
Pillar 3: Recovery	47.7
Coordination	75
Restoration	20.1

The financial management of RMG enterprises doesn't have any financial plan to cope with an emerging crisis so around 232 factories, 6.9% of the total number were forced to shut down permanently during the pandemic. Subsidized credit under the stimulus package and the gradual rise of production orders helped factories to tackle the problem in 70% of enterprises, left 30% were mostly small and non-member factories.

This new reality gave birth to some recommendations that would pave the path better to handle any future crisis in the RMG sector as

follows-

- Diversification of the associations' supply base by including both large-scale brands and small-scale buyers.
- Ensuring better buying practices by maintaining regular contact with the suppliers and proactively engaging with small-scale manufacturers.
- Providing technical and other business-related support to upgrade their value chain.
- BGMEA and BKMEA should implement the members to develop a financial sustainability plan and follow-up regularly.
- Stimulus packages need to be more outreaching that discouraged almost 30% of the factories from applying for assistance.
- Bangladesh Bank and other commercial banks need to

reexamine to make it more accessible.

- Special development programs including technological enhancement, management improvement, financial management improvement, buyers' networking and online IT investment need to be designed for factories located in Chattogram and Narayanganj.
- Emphasizing the incentives of SMEs and non-member RMG factories to facilitate their upgradation.

Emergency preparedness may ensure swift recovery and resilient damage control. The government should bound factories to pay workers' wages. Foreign direct investment (FDI) can ensure product diversification, a better competitive environment at the domestic level, the transfer of technologies and better industrial relations.

TEAM Group celebrates 'TEAM Mezban' festival

Special Correspondent

As a fast-growing company, TEAM Group is one of the well-known names in the garment industry of Bangladesh. It's a rapidly growing conglomerate, working in industries including RMG, Pharmaceuticals, Retail, IT & Real Estate.

TEAM Group owns and runs five RMG factories, including Brothers Fashion Ltd, which is a LEED GOLD Certified factory. All other RMG Manufacturing units are socially compliant. Its Sourcing Unit, Team Sourcing, is one of the largest Sourcing Companies in Bangladesh. Its operations are Global including the UK, Germany, Spain, Italy, Turkey, and Australia.

Recently Team Group hosted their traditional "TEAM Mezban" festival in a very pleasant atmosphere. This time the event was held at Old DOHS Community Centre,

Banani, Dhaka.

The main attention of the event was Atiqul Islam, Mayor of Dhaka North City Corporation and Tipu Munshi (MP), Minister of Commerce of Bangladesh.

Also, some other eminent personnel from Bangladesh Textile and Garment Sector were present on the occasion. Among them, Abdus Salam Murshedy - Managing Director of Envoy Textile, Faruque Hasan - Managing Director of Giant Group and Panel Leader of 'Shommilito Parishad' of upcoming BGMEA election, Shafiqul Islam (Mohiuddin) - Managing Director of Onus Apparel Ltd. and other officials of TEAM Group were present in the program.

Distinguished guests from 120+ factories, TEAM Group suppliers



Figure: "TEAM Mezban" festival was celebrated in a very pleasant atmosphere.

and customers were also present at the ceremony.

Honorable Managing Director of TEAM Group Abdullah Hil Rakib welcomed the guests on the occasion.

The event, which started at 10 a.m., featured a cake festival, cricket and badminton tournaments, football tournaments, Mezban Vojon and much more which ends with a prize-giving ceremony.

Robintex, being 'Textile Today Platinum Associates' demonstrates an affirmation of innovations in textile and apparel industry



Figure 1: Sakhawat Abu Khair Mohammad (3rd from right), Managing Director, Robintex Group and Tareq Amin (4th from left), Founder & CEO, Textile Today signed an agreement on behalf of the respective companies.

Sayed Abdullah

Robintex Group has come up to bring innovation in the textile and apparel industry jointly with Textile Today Innovation Hub being one of the 'Textile Today Platinum Associates'. Recently Sakhawat Abu Khair Mohammad, Managing Director, Robintex Group and Tareq Amin, Founder & CEO, Textile Today signed an agreement on behalf of the respective companies.

Also present at the event, Robin Razon Sakhawat, Director, Robintex Group; Nasrin Jahan, Director, Sourcing, Robintex Group; Md. Eousup Novee, GM-HR & Strategy, Textile Today; Sanjoy Kumar Saha, Sr. Manager, Industry Engagement & Sub Editor, Textile Today Amzad Hossain Monir, AGM, Textile Today were also present at the event.

Textile Today, the leading global textile media

platform appreciates Robintex Group for its contributions towards Textile Today Innovation Hub.

Sakhawat Abu Khair said, "I have always kept the environment in my mind in every aspect. Back in 1996, when I started the factory, I installed an ETP. Back then it was unthinkable."

Robintex Group, a Germany-Bangladesh Joint venture, has internationally been renowned for its continual accomplishment in exporting quality knit apparel to the international markets from its establishment in 1996.

With the world-leading machinery, technology and expertise from Germany, the USA, UK, Japan, Switzerland, Australia, Italy, Singapore and India, it

has been resolutely shaped to qualify to be a full-fledged vertically integrated composite knit premise.

Besides all of the required utilities and about 0.71 million square feet of floor space for production, it has plenty of open space, lush greenery and necessary environmental protection measures as well. With 1864 sewing machines, here, about 7500 skilled workforce members are working in an ideal environment to produce about 0.1 million pieces of high-quality and diverse types of knit garments every day.

Conceding to its buyers' increasing demands, Robintex has now committed an additional investment worth about US\$28.20M in the same premise to strengthen and enhance its production capacity.

Robintex has taken initiative to put its footprint in the sustainability and water-saving process. Robintex recently signed a 20 Years Power Purchase Agreement (PPA) deal with Joules Power Ltd (JPL) to install facilities for generating 3.1 MWp (Mega Watt peak) rooftop solar electricity. This will be Bangladesh's largest Industrial Solar Rooftop Project to be commissioned by Fiscal Year 2020-21.

The electricity will be generated on 32,886 square metres of rooftop area of several buildings of Robintex Group at Rupganj in Narayanganj district. The project will be implemented within nine months under the 'Opex model' where the builder will invest some \$1.7 million.

Not to mention, Robintex installed a state-of-the-art digital printing machine which print over 70 meter fabric per minute.

Also, harvesting rainwater is one of the projects where Robintex Group invested not for making money rather to contribute to sustainability. To run the project Robintex Group divided it into three segments –

1. Average normal rainfall calculation in Bangladesh (mm).
2. Rainwater harvesting plan.
3. Rainwater harvesting model.

The project designed and constructed based on the forecast and an average rainfall of Bangladesh particularly in the Dhaka division area where the factory is situated.

Partnering with Textile Today Innovation Hub will surely assist Robintex Group to decide on the best sustainable solution for their industry.

Textile Today is acting as an effective and efficient innovation hub', which regularly supports, facilitates, innovates, and enhances factory suppliers, suppliers, professionals, apprentices, etc. factory suppliers, suppliers, professionals, learning, etc.

By partnering with Robintex Group, the 'Textile Today Innovation Hub' will expand to a larger scale. Textile Today Innovation Hub is working on various industry projects regularly to find solutions. As an innovation hub, it regularly supports, facilitates, innovates, and enhances factory suppliers, suppliers, professionals, apprentices, etc. factory suppliers, suppliers, professionals, learning, etc.

World-leading machinery, technology & expertise from leading countries

Installed rooftop solar facilities to generate 3.1 MWp electricity

Harvesting rainwater to contribute in sustainability

Installed state-of-the-art digital printing machine which print over 70 meter per minute

Figure 2: Some key initiatives by Robintex.

Robintex Group believes that the industry will experience a new change in the manufacturing process, strategy and sustainable development that would be brought by the Textile Today Innovation Hub.

Becoming a part of this 'Innovation Hub' Textile Today Associates will not only help the platform work effectively but also enable partners to place the platform's knowledge, communication, and networking leverage on the market as their innovation-driven business.



Figure 3: Partnering with Textile Today Innovation Hub will surely assist Robintex Group to decide on the best sustainable solution for their industry.

The woven items export has been falling since June last year as many people have limited themselves to homes and countless worked from home because of the COVID-19 pandemic.

According to data from the EPB, between July and February, the first 8 months of the 2020-2021 fiscal year, the shipment of readymade garments (RMG) declined 3.73 percent year-on-year to \$21.03 billion.

Of the earnings from the RMG export, \$9.98 billion came from the knitwear export, which was up 3.84 percent. During the 8 months, the export of woven items dropped 11.49% to \$9.69 billion.

Considering the realities, how woven RMG export can see positive growth in the coming days? Should factories diversify the product range or what more can be done?

“

The woven sector is clearly in a distressed situation. Woven garment export growth has dropped for the 19th consecutive month due to a slowdown in demand in the time of lockdown in major markets.

In the current backdrop of uncertain progress from COVID-19 and the effect on international business, the distressing situation may prevail for more months till demand at the retail end starts responding positively.

(Source from the Daily Star)



Rubana Huq
President, BGMEA

”

“

With the current worldwide situation of the COVID-19 pandemic, we have to consider the harsh realities that woven items are not being sought after as much now. People are now working from home and with limited income.

As woven clothing are mainly outdoor clothing, the demand for woven items worldwide is not at the same level, not only that, but the demand has drastically fallen. With this comes the saddening but real possibilities of job losses and a massive change in the price factors.

In countries where the pandemic situation is slightly better, the buyers are paying extremely low prices. The prices that are offered are from the days in the 90s where our older generation used to earn 60 cents CM per price to now when we are in 2021, the pandemic has led to a very unstable market price situation.

In the current climate, Woven manufacturers should diversify into other items that have a growth prospect. The business might not immediately pick up, but as the pandemic situation gets better across the globe, in many countries where lockdown restrictions are lifted, the demand for woven items will pick up again.

The government should also take steps to make sure that the payback periods and the working capital loans handed out are being earned properly by the companies. In the existing situation, the woven exports are much lower, and many companies are not able to fulfill their installments for the working capital subsidy.

We must patiently wait and work with caution going forward to manufacture smartly at a low cost. But we will need more prices and better terms not only from our buyers but also our local banks and central bank.



Maheer Mannan
DMD
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ACIMIT members offering sustainable high-level innovation to reduce production costs

Alessandro Zucchi, President, ACIMIT



Association of Italian Textile Machinery Manufacturers (ACIMIT) is promoting the Italian textile machinery sector and in supporting its activity, mainly abroad, through the most updated and innovative promotional means, constantly improved during its 75 years of life.

To promote the Italian textile machinery knowledge throughout the world, ACIMIT gives any kind of information on the activity of the producers and organizes a wide range of promotional activities (such as exhibitions, technical seminars, missions in Italy and abroad, etc.) most of the time in collaboration with Italian Trade Agency.

Since 2017, Alessandro Zucchi leading the ACIMIT as the President.

Born in the province of Bergamo in 1958, Zucchi has garnered multi-year experiences in the textile machinery sector.

Moreover, Zucchi has long been active in the life of the association, lending his support to outgoing president Raffaella Carabelli, as Vice President. Since 2015, he has been involved with ACIMIT's delegation at Cematex, the Committee of European Textile Machinery Associations.

Recently, Alessandro Zucchi shared his vision and various aspects with Textile Today. Here is a glimpse of the discussion for the readers.

Textile Today: ACIMIT (the Association of Italian Textile Machinery Manufacturers) reached its 75th anniversary. How many members you have now? As an old and experienced organization, how is it setting its future goal?

Alessandro Zucchi: ACIMIT member companies are about 170. Our goal remains that of promoting the Italian textile machinery industry, making Italian manufacturers known and supporting them in their international activities.

Textile Today: Consumers are demanding special finishes on the products as a protection against infections. How are ACIMIT member companies working on this aspect? Have there been any specific initiatives by Italian companies to battle future crises?

Alessandro Zucchi: Innovation is the main feature of the Italian textile machinery sector. To face the pandemic, our companies are working with their textile customers, especially those operating in the technical textiles

Innovation is the main feature of the Italian textile machinery sector. To face the pandemic, our companies are working with their textile customers, especially those operating in the technical textiles and nonwovens sector, to provide proper solutions to the health emergency in which we find ourselves.

and nonwovens sector, to provide proper solutions to the health emergency in which we find ourselves.

Textile Today: How is ACIMIT facilitating to their members for increasing business worldwide?

Alessandro Zucchi: Every year ACIMIT, in collaboration with the Ministry of Foreign Affairs and International Cooperation and the Italian Trade Agency, carries out various promotional activities aimed at bringing together

our companies with potential customers in different countries.

Textile Today: How ACIMIT can help Bangladeshi textile manufacturers to adopt cost-effective process?

Alessandro Zucchi: We are aware that companies remain competitive in the global market textile if they can offer low prices. In this situation, the Italian manufacturers distinguish themselves for the high level of innovation that allows them to offer appropriate solutions to reduce production costs throughout the entire textile chain.

Textile Today: What are the latest innovations are coming up by Italian textile machinery manufacturers considering sustainability particularly chemical, water, environment and energy?

Alessandro Zucchi: As far as sustainability is concerned, ACIMIT and its member companies have been committed for years to offering machines that are sustainable both from an environmental and economic point of view. This commitment is testified by the ACIMIT Sustainable Technologies project. The ACIMIT Green Label, the core of the project, certifies the progressive reduction of consumption of raw materials, energy and chemicals for the textile companies that use labeled Italian machines.

Textile Today: What are the plans taken by ACIMIT for its members' business & brand promotion in the year ahead?

Alessandro Zucchi: After 2020 marked by the pandemic, 2021 should be the year of recovery. The vaccination campaign launched in many countries gives hope for a return to normality and travel abroad for our employees. In the meantime, ACIMIT is carrying out several promotional activities, such as webinars, that can introduce the supply of our manufacturers to textile operators of selected countries.

CHT Group - Innovative approach of PFC-free anti-wick finishing on threads and yarns

Water-repellent, durable and sustainably processed threads and yarns and threads set trends: With the development of ECOPERL YWR the CHT Group enables you to achieve a PFC-free anti-wick effect on your yarn to meet the highest demands.

Rainer Berndt, CHT Germany GmbH, Textile Auxiliary Solutions – AF Finishing

Chemistry powered by renewable natural performance

The known chemistry bases for durable water-repellent auxiliaries such as waxes, polyethylene, paraffins, silicones and polyurethanes are working well but especially on yarns a higher resistance to mechanical friction is required. Therefore, in the development phase different bio-based polymers were tested which significantly increase the abrasion resistance of the durable water repellent.

The best performed and selected bio-base and renewable polymer have been tuned in a matrix of waxes and further polymers.

The results are convincing: ECOPERL YWR is excellent for stopping water absorption, is versatile and highly resistant to the friction generated during sewing, knitting and weaving processes.

Key characteristics of development: biodegradability, renewable raw material, compliance with the requirements of the main textile labels and no cytotoxicity

ECOPERL YWR stands for sustainable product development and provides excellent inherent biodegradability.

With focus on the environment ECOPERL YWR fulfils the criteria of known standards such as ZDHC, bluesign®, STANDARD 100 by OEKO-TEX®, GOTS 6.0 and C2C

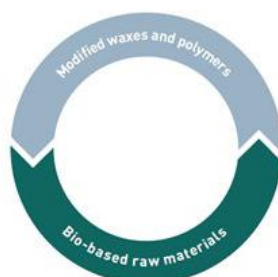


Source of the image from getty images

have been requested.

Product was successfully tested according to DIN EN ISO 10993, i.e. no cytotoxic substances are released by it. Tests for a used on hygienic textile articles are being in progress.

Sustainable features of ECOPERL YWR



50% * BIO-BASED RAW MATERIAL

*calculated to the active content of product



INHERENT BIODEGRADABILITY*
98% elimination, 28% mineralisation

Versatile application fields and additional strength

ECOPERL YWR can be applied on yarn dyeing machines or even in lick-roller applications or dosing systems during the winding process.

A further strength of ECOPERL YWR compared with PFC

Sustainable Finishing

containing product, which was formerly used is the significantly better coefficient of friction. PFC containing products generally deteriorate the coefficient of friction values.

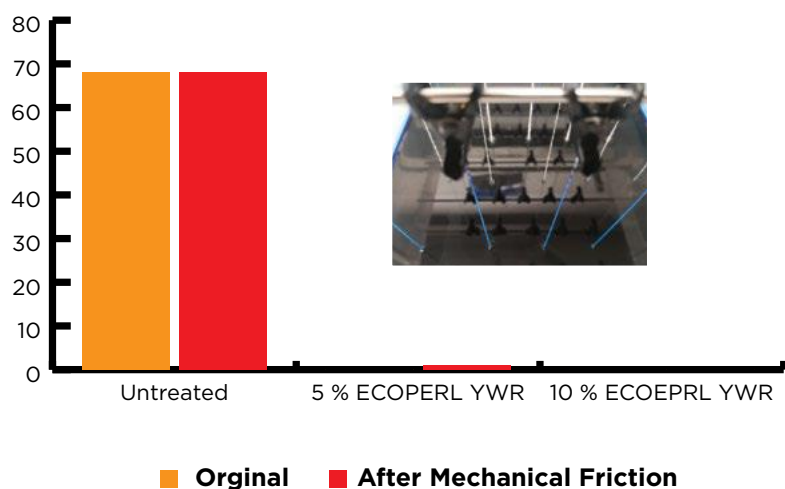
For natural and synthetic threads and yarns

Hydrophobic threads and yarns have a multifarious use such as sewing and embroidery threads for shoes, tents, bags and backpacks. Furthermore, on laces, cords and ropes hydrophobic treatment must be resistant against frequent friction and ensure a good anti-wick and hydrophobicity behaviour.

Anti-wick test with additional friction according to the Gore test method

Test method Wicking
(according to Gore test method)

Wicking test Nm 40/3 PA Sewing thread



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Application	Applicable on yarn dyeing machines, lick-roller or dosing systems during winding

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If we have a look at utensils like zippers for tents, the waterproofness of the zipper will be enhanced by the DWR finish.

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Overview of the proven characteristics



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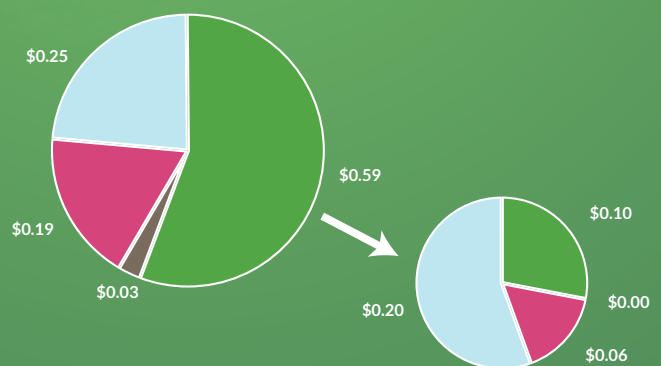
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* Fastness expert-judged to be equivalent/superior to exhaust dyeing

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Apparel Today

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February 2021



Sateri unveiled new recycled fibre FINEXTM

Bangladesh RMG suppliers are lagging in Western fashion brand dealings

Smooth supply chains will redesign sporting goods segment

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Hongkong		

Product details

Dtex	Length (mm)	Spinning Type	Blend
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1.33	38 mm	Ring, OE and MVS	PV and VC

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Asia Pacific Rayon (APR)

Sateri unveiled new recycled fibre FINEXTM

Sateri Story

Sateri introduced FINEXTM as its new product brand for recycled fibre. FINEXTM, short for 'Fibre Next', is an innovative next-generation cellulosic fibre containing recycled content. Since its announcement in March 2020 of a breakthrough in commercial production of viscose using recycled textile waste, Sateri has worked closely with its downstream yarn and garment manufacturing partners to bring the recycled fibre product to the consumer market.



Figure: Sateri introduced FINEXTM as its new product brand for recycled fibre.

FINEXTM 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.

Innovation and technology has made cellulosic textile fibre recycling possible and FINEXTM represents how nature not only renews itself but that products made from nature can also be regenerated. This, at its heart, is what circular fashion looks like.

Sateri's brand promise to customers remains constant- its products are sustainable, high quality, efficient, and cost-effective. The FINEXTM tagline 'Together for a Better Next' expresses our aspiration to be the partner of choice for next-generation fibre.

Allen Zhang, President of Sateri stated, "Being the world's largest viscose producer gives us the advantages that come with volume, but the value is what we hope differentiates us. By this, we don't only mean higher-value products like FinexTM but also the value we bring to communities, country, climate and customers."

Globally, less than 1% of the material used to produce clothing is recycled into new clothing. This presents a big opportunity for textile fibre recycling, particularly in China which is the largest textile



producing country in the world.

Just a month before the launch, Sateri became a council member of the China Association of Circular Economy (CACE). The company will work closely with CACE's Textile Waste Comprehensive Utilisation Committee to establish standards and promote industrial-scale textile waste recycling.

Furthermore, the fibre is now certified to the Recycled Claim Standard (RCS) which verifies recycled raw materials through the supply chain. RCS is intended for use with any product that contains at least 5% recycled material, and Sateri has successfully produced FinexTM viscose fibres with up to 20% recycled content.

Under the RCS certification process, each stage of production is required to be certified, beginning at the recycling stage and ending at the last seller in the final business-to-business transaction.

The new developments were announced at the official launch of FinexTM. About 160 guests, mostly senior representatives of major fashion brands and fabric and garment makers, gathered to celebrate the milestones that cement the status of FinexTM as a game-changer for sustainable fashion.

Allen Zhang said, "The development of Finex has been an intensive effort for Sateri from initial commercialization, to partnering brands like Lafuma and Rico Lee, and finally to the launch. This is all made possible with collaboration across the value chain - working alongside yarn spinners, garment makers and brand partners - to bring high quality and more planet-friendly product to consumers. The fashion industry is changing fast and, beyond functionality, circularity is now of the greatest importance in apparel manufacturing."

In the '2020 Sustainable Fashion Report' released by China's leading business news publication CBNweekly, results of a survey with stakeholders in the fashion value chain reinforced the potential of textile recycling as a solution to the problem of textile waste arising from over-consumption and production.

The report identified technology and capital as the biggest barriers to textile recycling and highlighted the critical role brands play in mobilizing manufacturers and consumers to advance sustainable fashion.

Beximco starts highly equipped PPE Industrial Park

Rahbar Hossain

US Ambassador to Bangladesh Earl R. Miller inaugurated the 'BEXIMCO PPE Industrial Park' at Savar, Dhaka on February 2021. This is the first-ever industrial park in South Asia only to manufacture personal protective equipment (PPE).

Beximco invested \$100-million for this 25-acre highly equipped industrial park. The construction and certification of the site took six months from groundbreaking to certification and full production.

The PPE park converts granules to melt-blown as well as laminated fabrics in different GSM, the company said in a press release.



Figure: US Ambassador to Bangladesh Earl R. Miller inaugurated the 'BEXIMCO PPE Industrial Park' at Savar, Dhaka.

The fabric is later used to manufacture isolation and surgical gowns disposable sterile and non-sterile, reusable isolation gowns, N95 cap type and foldable type masks, surgical masks, disposable scrubs, woven and knitted shoe covers and head covers, reusable scrubs with water repellent treatment.

"The new facility shall help manufacturers, buyers, retailers, brands and the government with required services since all the services will be available under one roof encompassing European, American and other global regulatory standards," Beximco CEO Syed Naved Husain said at the inauguration ceremony.

Salman F Rahman, MP, Honorable Advisor to the Prime Minister, Bangladesh for Investment & Private Sector and the Vice-Chairman of Beximco Group also

joined the ceremony online.

The Park will serve both domestic and international markets and is aimed at increasing the diversity of the supply of PPE, ensuring that it is not dependent on any one country, he said while hosting the event.

"Beximco has steadily contributed to Bangladesh's meteoric rise as a manufacturing hub in South Asia. I am delighted with the new development since it would place Bangladesh on the world's PPE manufacturing map."

Beximco Group, through its new Beximco Health division, has agreements to supply PPE, including masks and protective gowns, to major US healthcare service providers.

Intertek and Beximco have developed the PPE Centre of Excellence at 'Beximco Health' in the PPE Industrial Park in Savar, Dhaka.

This is Intertek's, a 130-year-old leader in testing, the most advanced PPE lab capable of testing all levels to comply with the US, EU and UK standards, according to the PR.

"This shows that Bangladeshi enterprises can move beyond readymade garments in producing exportable goods," US Ambassador Earl R Miller said while inaugurating the park.

Last year, at the height of the first wave of the pandemic, Beximco pivoted from producing garments to protective equipment within a matter of weeks, learning the specialized fabrication techniques, setting up production lines, and producing 6.5 million gowns for distribution in the United States through the US Federal Emergency Management Agency.

However, the value of US products exported to Bangladesh has grown fourfold in the same period. "Our two nations share a common perspective on the value of trade and free enterprise in a nation's progress. Beximco represents these values." Miller said.

On teaming up with Beximco, André Lacroix, CEO of Intertek said, "As a purpose-led company, Intertek's mission is to make the world a better and safer place by bringing quality, safety and sustainability to life."

Bangladesh RMG suppliers are lagging in Western fashion brand dealings

US Sampa

Recent news of Online fashion brand Boohoo had purchased the Debenhams brand for 55 million pounds, Asos had signed a deal to buy the brands of Arcadia, including Top Man and Top Shop, for 295 million pounds are making headlines in the fashion industry.

Such deals are snapping successful business owners that are facing loss due to the global pandemic. And these deals are necessary to keep brands alive and prevent them from disappearing completely. Boohoo and Asos have been appeared as extremely nimble operators during the COVID-19 crisis and from a business perspective; they need huge credit for countering an incredibly challenging 12 months.

Attempts are made in the West because thousands of jobs being lost on the high streets due to the closure of stores, as high-street brands move online and retail outlets close for throwing acquisitions.

On the other side, these

developments are causing worry for apparel suppliers.

As this situation is causing great harm to the apparel supply chain in Bangladesh and its readymade garment (RMG) industry. Suppliers in Bangladesh have been supplying clothing to brands which in recent months have gone into administration—indeed, up the time until these brands have gone bankrupt.

The potential bankruptcy of the stores in the West in recent months has caused closures and in consequence hit major RMG Bangladeshi suppliers. Administration proceedings of major brands are panicking manufacturers in Bangladesh. As suppliers face financial threats for they recognize that, whenever there is an administration, suppliers remain behind the queue in terms of receiving the owing money.

Western method of payment is after getting the shipment. For instance, as various retailers have gone into administration,

many suppliers from Bangladesh have collectively been left undue millions of pounds. Some questions arise here-

- Will they see that money again?
- Will they ever be able to recoup their labor costs or the money they spent on raw materials producing apparel?
- What will be the impact on garment workers?
- Who is looking out for them?

When the liquidators come to pay creditors, suppliers will be way down the list. Many will be lucky to receive anything at all and will take a massive financial hit. Sometimes the ending situation is suppliers have tens or hundreds of thousands of pounds' worth of branded apparel sitting in their factories. This is deadly for them in most cases.

But in some cases, suppliers may receive some owed money between 10 and 20 percent of the value of the order, in case it falls into bankruptcies. This amount does not even cover the cost of fulfilling the order for industries that work on tight margins. Suppliers are supposed to do business in such conditions. But how?

Regulatory problem is present in businesses in the West. It is allowed to do deals to purchase bankrupt businesses with little or no thought for the liabilities of that business. Right of manufacturers is absent here. Mostly the debt is pretty much written off and there is nothing to do about it.

On another side, the problem arises with administrations. Various organizations involved—accountants, administrators, etc.—have raked over the carcass and paid their fees, here also suppliers are bottom of the pile. Salaries and



Figure 1: Suppliers always remain behind queue in receiving owing money when brands go bankrupt.

rents are paid and other liabilities such as loans are accounted for. But when comes to the name of the suppliers, it appears "out of sight, out of mind."

Some thinkers are suggesting new laws as a solution: not only that but also better ways of doing business. There have been opting for some kind of fund or pot which brands would pay into as a part of doing business with garment factories in Asia.

This fund would be used to ensure payment for legally owed wages in the case of insolvency. It's injustice for our customers (brands) to go down and new owners come along and write off all the debt that makes the victim the suppliers in Asia. This is not just a Bangladesh concern; it is a global fact that needs to solve globally.

In the time of dealings of purchasing one business which has gone into administration, suppliers need to be part of the

administration. Big liabilities need to be factored in. For such cases, some "deals" might not look so attractive, but so be it.

Accordingly, these new laws in West around bankruptcy is to ensure that when new owners take on a business, they also take on its debt, or at least a significant proportion of it.

Ultimately this law is not going to be passed anytime or soon. "Turkeys do not vote for Christmas". The real thing is- all want business.

But business surely has to be a two-way street, built on mutual respect, shared goals and cooperation. Business scales are almost completely in the hand of buyers from the West. This helpless situation are affecting manufacturers and even the buyers themselves, as having suppliers permanently being left out of pocket creates disruption and uncertainty in the supply chains.

The COVID-19 pandemic has once

again brought these difficult issues to the focus. It's high time, we tackled them once and for all, or we will all be having these conversations again the next time another industry crisis or recession happen again and again.

It sounds extreme but already brands simply cannot be trusted to protect the workers in their supply chains through voluntary codes of conduct. Many brands and retailers are also pioneers in global business in responsibility and practicing ethics in taking care of every member. But many do not care—some of the more glaring examples we have seen during this Covid-19 pandemic.

As suppliers do not depend only on the goodwill of brands, it has become clear now that our industry needs binding legislation and supply chain regulation to hold brands to account for respecting human rights in their supply chain.

Win-win-win through negotiations

Himel Mahmud

Negotiations happen 24/7/365. Any interaction with another person is a potential negotiation. We are born negotiators. Children know how to negotiate with their parents and no one taught them.

Even when you are in a job, you are selling your time and expertise for a monetary return.

Surprisingly when in any occasion on 'negotiation', the audience is asked a very simple question 'how many of you are negotiators?', only a few hands are found up; whereas we all are negotiators!

We negotiate all the time whether it is with our children, our partner, our spouse, our business colleagues and partners, or even with ourselves.

Frist negotiate with yourself before you start negotiation with your business partners. Because it

is always easier not to negotiate than negotiate.

Sometimes, we negotiate as a process only, not with the SMART purpose of win-win-win and of achieving it. In Business, it primarily happens due to some barriers. For instance-

- Fear of losing business
- Lack of Meeting preparation and home-work
- Lack of active listening skills
- Language (commonly English) barrier
- Lack of Right Products and the like.

Successful people in both business and life are successful negotiators. It is either been self-taught or learned from others, from workshops, masterclasses, etc.

In the next article, we will share

why we have stated 3 wins, win-win-win. And how to start developing a mindset always to negotiate smartly.

Special thanks to Rukunuzzaman, CEO, AGDL and Derek Arden, an international negotiator

(To be continued)

Author



Himel Mahmud

Head, Marketing and Merchandising
Aman Graphics and Designs Ltd.

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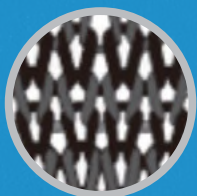
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Smooth supply chains will redesign sporting goods segment

Amena Kamal Khan

Amid ongoing market insecurity caused by COVID-19 related issues, future-proofing sporting goods supply chains needs daring strategies, with a elevated bar on quickness, sturdier supply chain partnerships, and near-shoring among topmost options being measured by industry directors.

The supply chains continue to be one of the main challenges for the sporting goods industry in 2021, according to a new in-depth study of the segment from the World Federation of the Sporting Goods Industry (WFSGI) and McKinsey & Company.

1st and before the 2nd wave of COVID-19 related lockdowns. On the upside, they inclined to outdo the broader clothing market as the year advanced, with sportswear brands more robust than the rest of the clothing industry.

The report says, "The coming 12 months are set to be characterized by a more positive outlook, albeit amid uncertainty caused by an unfolding second wave and the relatively slow ramp up of vaccination capacity and delivery."

Highest prospects are seen in the likely return of big sporting events like the Olympic and Paralympic

witnessed that sporting goods industry leaders are vigilantly hopeful for the year ahead – with 64% of respondents guessing 'better' or 'much better' market situations than in 2020.

But amid insistent uncertainty around the course of COVID-19, it also makes sense equally to build sturdier supply chain partnerships and discover alternatives such as near-shoring – with 62% of participants saying they were considering local options.

Future-proofing supply chains

More responsive supply chains are another feature on company schedules. In a post-COVID world, categorized by smaller demand cycles, e-commerce, and closer direct-to-consumer (DTC) relationships, they are the least requirement in some markets.

While the report evaluate the DTC model curved forward by 2 years in the 1st months of the COVID-19 pandemic, with e-commerce progressing by as much as 4 years.

Adding that, "Higher online penetration calls for faster reaction times and more flexibility. Indeed, soaring online activity, and the resulting glut of data, has allowed companies to respond more swiftly to new demand trends such as mass personalization. By doing so, they have been able to create highly tailored items for specific audiences."

The net consequence is that companies have had to be more agile, and produce reduced, more regular product runs more closely associated with demand. Asian suppliers lead times of big sporting goods companies have reduced to 30 days from 120 days.



Figure 1: Future-proofing sporting goods supply chains needs daring strategies, with a elevated bar on quickness, sturdier supply chain partnerships.

The research, 'Sporting Goods 2021 – The Next Normal for an Industry in Flux' proposes that in 2020, the sporting goods industry slowed down for the first time since the financial crisis – decrease by around 7% to US\$348 billion.

Most brands, retailers and manufacturers ended 2020 considerably in the red, despite a recovery in activity after the

Games and the UEFA European Football Championships, along with the current rise in acceptance of home, outdoor, and digital activities, sport and fitness.

To gain triumph in the new situation, the sporting industry needs to adjust both its customer proposition and its operational capabilities.

A survey done by the research



Figure 2: More than 75% of industry representatives believe the athleisure market size will keep growing, and 33% believe that growth was accelerated through Covid-19.

The industry is also exploring the near-shoring and re-shoring options to try to cut lead times even further, as well as ease shipping insecurity due to trade rule worries.

Besides exploring near-shoring options, around 73% of sporting goods leaders express that they are engrossed on building closer relationships with a lesser number of current suppliers.

Around 60% expect consolidation in the supply chain over the approaching period. A connected developing trend is co-location with suppliers, maintained by tailored and customized machinery, which can be sourced on timelines as short as one day.

To utilize the most of the shifts in supply chain logistics and capabilities, decision makers need to make brave decisions.

If that prefers moving to near-shoring, it will need a different mindset and business model, and faster processes in relation to trend identification, production schedules, and supplier contracts.

Trends set to outline sporting goods industry in 2021

The report boons 8 important

trends set to form the sporting goods industry in 2021 and beyond. Most were already developing ahead of COVID-19, but the dramatic events of the past year have accelerated their introduction and heightened their impact:

1. Athleisure was a megatrend before Covid-19, but the pandemic has served to further blur the lines between work and free time, and there is a rising acceptance of comfortable wear in previously more formal contexts. More than 75% of industry representatives believe the athleisure market size will keep growing, and 33% believe that growth was accelerated through Covid-19.
2. Around 40% of people are less active, but around 30% are more so – with less affluent households exercising less. Physical inactivity is strongly linked to income: 46% of groups below US\$25k were physically inactive in 2019 versus 19% of groups with incomes higher than US\$100k.
3. Sustainability has become an increasingly urgent consumer priority, and companies have responded by introducing more sustainable products. Covid-19 has accelerated the trend. 67%

of consumers consider the use of sustainable materials an important factor when it comes to purchase decisions. The number of net new "sustainable" SKUs introduced in the online market grew by 58% per annum between mid-2017 to mid-2020.

4. The past year saw a leap towards digital fitness, driven by social distancing and stay-at-home requirements. These will not fully replace traditional sports and exercise but rather enhance them in a hybrid model including free and paid apps, livestream and (non-)connected equipment.

5. The past year has seen a surge in online shopping, and many first-time users will stick with their new habits. The online share of major sporting goods players increased by ~3x between 2019 and H1 2020. Industry experts expect it to decline post lockdown but stabilize around 25% in 2021.

6. With sporting events cancelled, postponed, or played in empty stadiums, and consumers spending even more time online, sports marketing has shifted from assets with broad visibility (club, league, or event sponsorships) to influencers on social media channels.

7. 43% of respondents to the WFSGI and McKinsey & Company Sporting Goods Survey expect that sporting goods marketing will not be as closely linked with major sporting events in future, compared with just 29% that say the link will be maintained. Some 64% expect the industry will focus more on digital advertising.

8. Brick and mortar stores were already under pressure pre-COVID. However, lockdown measures have accelerated the crisis. To attract consumers back to stores, retail needs to find new purpose, new experiences, and new levels of convenience that cannot be offered digitally.

9. More agile supply chains have become a permanent feature on company agendas.

ATET working relentlessly to establish harmony, co-ordination for textile industry

Engr. Md. Aminul Islam, President, ATET



The Association of Textile Engineers & Technologists (ATET), a national association for the Textile Engineers and Technologists of Bangladesh, was officially founded in 2012. Recently the new committee has been announced Engr. Md. Aminul Islam becomes the President 2nd time in a row.

ATET has been working for the progress of the Textile Engineers who are the core of the Textile Industry.

Since 2018, the ATET committee led by Engr. Md. Aminul Islam, Managing Director of Dara Technology (BD) Limited.

Engr. Md. Aminul Islam, Managing Director of Dara Technology (BD) Ltd., is a visionary leader. Aminul passed a Diploma in Textile Engineering from Tangail Textile Institute and completed B.Sc. in Textile Engineering from City University.

He has vast working experience in different textile factories and educational institutes.

Recently Textile Today team talked with Aminul Islam about various issues and ATET's plans. Some of the key discussion has been published for the readers.

BTT Interview

Textile Today: ATET (the Association of Textile Engineers & Technologists) reached its 12th anniversary. How many members you have now? As an old and experienced Association, how is it setting its future goal?

Md. Aminul Islam: We have almost 10,000 general members. Also, we have around 600 life members. And we hope that within the tenure of this committee it will reach 5000.

Besides, as an organization, ATET will increase its member so that it can serve a big number of textile engineers and technologists. And we are working hard to ensure that.

As for setting its future goal, our main aim is to develop the skills

of new textile engineers. As the global industry demands skilled engineers. ATET has a wide array of experienced leaders who can develop the newcomers in a short course. It will make getting jobs easier.

Above all, ATET is trying its utmost to make the textile communities' life - be it in the job, social, personal - much easier. There is no separate BCS category for textile engineers. But this community and the readymade garment (RMG) industry is tremendously contributing to the economic growth of Bangladesh. This cannot be achieved alone, all the related organizations, leaders need to work together to make it possible.

Textile Today: How ATET helping its' members to increase their

skills and knowledge domain?

Md. Aminul Islam: There is no alternative other than skilled workers in the RMG industry, as I have pointed earlier.

Thousands of foreign experts work in the Bangladesh textile and apparel industry. Annually taking away millions of dollars without paying any tax.

There is no policy regarding foreigners working in the industry either. ATET wants to have the policy to increase local textile engineers' scope in the industry.

Textile Today: Whole industry has seen many ups and downs during this COVID-19 pandemic. How ATET evaluating this situation and helping the industry to turn-back?

Md. Aminul Islam: In 2020, we

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were severely hit by this global COVID-19 pandemic. But much of it has been recovered due to local textile and RMG millers' resilience.

A lot of apparel owners, workers and engineers have suffered immensely in the first wave of the COVID-19 pandemic. ATET as an organization worked hard to minimize the impact by arranging jobs for a good number of workers and engineers.

As for the overall impact, after observing the recent global fashion scenario, we are hoping for a full recovery.

Textile Today: How local professionals can contribute more to industry development?

Md. Aminul Islam: It is a very vital question for the Bangladesh textile and apparel industry – for its survival and future sustainability – to develop local professionals. There are more than 80 plus govt. and private textile institutes who are relentlessly working to bring fresh blood.

Our competitor countries are

putting serious challenges to us by greatly investing in human capital besides other developments. Meaning we need to be always on our toes in every aspect – be it in providing top-notch education, R&D, process development, increasing efficiency – of this textile and apparel industry to adopt and equip our textile engineers.

For a long, we are feeling the necessity of having our design and development i.e., R&D. in the last few years some notable leading apparel factories have come up to and providing top-notch R&D but the general RMG sector still lacks greatly in this arena. Which is of course a great concern for us.

There is no alternative for us to invest in having our creativity. Rather only investing in bringing new machinery.

Textile Today: How the associations (ATET, ITET, BGMEA, BKMEA) and government can work together at the policy level to make the business more sustainable?

Md. Aminul Islam: As I said earlier, it is a combined process. Where everybody needs to work as a body to ensure that the Bangladesh RMG industry remains viable globally.

Usually, the jute and textile ministry make all the policies regarding the industry. as an organization, in every meeting, ATET has been expressing its opinion that all the policy the ministry is taking needs to be textile industry, engineers and workers friendly.

Besides, other organizations are working hard to develop this sector. Synchronized co-ordination is a must in this.

The government's initiative of developing 100 economic zones holds a great aspect for us. Be it in investment, or job creation. We hope that these are developed very quickly.

Not to mention, media's role in it is paramount in branding Bangladesh textile and apparel industry. especially Textile Today is like a voice of our textile engineers.

Dekko & Agami Accessories received 'LEED Platinum' certification

A H Monir

Dekko Accessories Limited and Agami Accessories Limited have obtained the Leadership in Energy and Environmental Design (LEED) Platinum Certificate from the US Green Building Council (USGBC). LEED is an internationally recognized green building certification system.

According to a detailed review of the USGBC analysis of all program data showed that the organizations met the requirements and earned a total of 87 lead points for certification.

360 Total Solutions Limited (TSL) has acted as the main consultant

for this project. By gaining those LEED points, Dekko and Agami Accessories have been ranked in the top ten factories in the world along with Bangladesh.

The LEED certificate demonstrates the sustainable and sustainable development of Dekko and Agami Accessories.

At the time of awarding the certificate, Ananta Ahmed, a faculty member of USGBC and Chief Consultant and Managing Director of 360 TSL, said, "LEED was not just a certificate. It is also the most effective business management system. In addition



Figure: Mohammad Abdur Rouf, Executive Director, Dekko Accessories Limited is inspecting the recycle polyester button process.

to total cost savings, the project works to save on efficient management of energy and water use."

Climate action in fashion, as big clothing brands back Bangladesh recycling scheme

Reuters, Dhaka

Major fashion brands, including H&M, M&S and C&A, are getting behind an initiative in Bangladesh that aims to use more recycled materials in clothing production and significantly cut planet-heating emissions from manufacturing by 2030.

The Circular Fashion Partnership, announced this week, brings together more than 30 international brands, Bangladeshi recycling firms and garment manufacturers in a push to reuse textile waste from clothing factories to create new products.

If successful, the initiative could be replicated in other countries, such as Indonesia and Vietnam, and help cut the broader fashion industry's emissions, said the Global Fashion Agenda (GFA), a nonprofit body that is leading the new scheme.

In 2018, the sector's greenhouse gas (GHG) emissions were just over 2 billion tonnes, a figure that needs to be halved by 2030, to be in line with global climate goals, said the GFA.

"Reducing environmental impacts such as GHG emissions and circularity go hand in hand," said GFA spokeswoman Alice Roberta Taylor in e-mailed comments.

The partnership would cut carbon emissions from clothing production and demand for raw materials, which include fossil fuels, by slimming down the amount of waste and increasing the use of recycled materials over virgin materials, she noted.

Under the 2015 Paris climate accord, nearly 200 countries agreed to slash greenhouse gas emissions to net-zero by mid-century and limit global average temperature rise to "well below" 2 degrees Celsius above preindustrial times.

According to 2020 research by the GFA and McKinsey & Company, the fashion industry produces 4 per cent of global climate-warming emissions - equal to the combined

annual emissions of France, Germany and Britain - and needs to intensify its efforts to align with the Paris Agreement goals to curb climate change.

The UN Environment Programme in 2019 put the fashion industry's share of global carbon emissions at 10 per cent - more than all international flights and maritime shipping combined - and said it was the second-biggest consumer of water.

Bangladesh - a low-lying nation considered highly vulnerable to climate change impacts such as intensifying floods, storms and sea level rise - is the world's second-largest producer of clothes and its economy depends heavily on the garment industry.

But most waste from the industry is either exported or down-cycled for less valuable uses, said the GFA, adding the circular plan aims to change that by increasing the value of the waste.

Miran Ali, a director at the Bangladesh Garment Manufacturers and Exporters Association, said it was time for the fashion industry to move away from a linear business model of "take-make-dispose" and towards a circular approach.

As Bangladeshi factories produce items in large volumes, their waste is standardised, making it relatively easy to deal with, he noted. "Therefore, Bangladesh can be a global leader in the area of circular economy," he said in a statement.

The Green Climate Fund, set up to help developing nations adopt clean energy and adapt to climate change, approved a separate project last year to help cut emissions in Bangladesh's garment sector by enabling more efficient energy use.

H&M, one of the Bangladesh industry's biggest clients, told the Thomson Reuters Foundation it is

working on transforming its whole business to become "fully circular and climate positive."

To get there, the Swedish fashion chain's targets include making its supply chain "climate neutral" - meaning it does not contribute to global warming - and only using recycled or other sustainably sourced materials, both by 2030.

"As we move towards a business model based on a circular economy, our climate agenda is pushed. And we want to use our size and scale to make a difference," Cecilia Strömblad Brännsten, H&M Group's environmental sustainability manager, said by email.

The Thomson Reuters Foundation is in a partnership with the Laudes Foundation, which is affiliated with the retailer C&A.



Figure Major fashion brands, including H&M, M&S and C&A, are getting behind an initiative in Bangladesh that aims to use more recycled materials in clothing production and significantly cut planet-heating emissions from manufacturing by 2030.

Sota Ghar Color House join hands with Textile Today for steering innovation in the textile and apparel industry

Sanjay Kumar Saha

Sota Ghar Color House has come up to bring innovation in the textile and apparel industry jointly with Textile Today Innovation Hub being one of the 'Textile Today Associates'.

Recently Anwar Hossain Didar, Proprietor of Sota Ghar Color House and Tareq Amin, Founder & CEO, Textile Today signed an agreement on behalf of the respective companies.

Anwar Hossain Didar said, "Our association with Bangladesh Textile Today will remain intact and we will always be involved with the latest innovations in Textile Today."

Sota Ghar Color House is a reputed importer of print-related equipment with a lot of reputation in the country and abroad.

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- Flock Gum
- Sun Reflective Color
- Redium Powder



Figure: Anwar Hossain Didar, Proprietor of Sota Ghar Color House and Tareq Amin, Founder & CEO, Textile Today signed an agreement on behalf of the respective companies.

- Foil Papers
- Oxal Fixer
- Rubber Gel

Besides, Sota Ghar Color House achieved international certifications like REACH, OEKO-TEX®, ZDHC, GOTS, MRS L Compliant, EU Ecolabel, NORDAC Ecolabel.

Partnering with Textile Today Innovation Hub will surely assist Sota Ghar Color House to decide on the best sustainable solution for their industry.

Textile Today is acting as an effective and efficient innovation hub', which regularly supports, facilitates, innovates, and enhances factory suppliers, suppliers, professionals, apprentices, etc. factory suppliers, suppliers, professionals, learning, etc.

By partnering with Sota Ghar Color House, the 'Textile Today Innovation Hub' will expand

to a larger scale. Textile Today Innovation Hub is working on various industry projects regularly to find solutions. As an innovation hub, it regularly supports, facilitates, innovates, and enhances factory suppliers, suppliers, professionals, apprentices, etc. factory suppliers, suppliers, professionals, learning, etc.

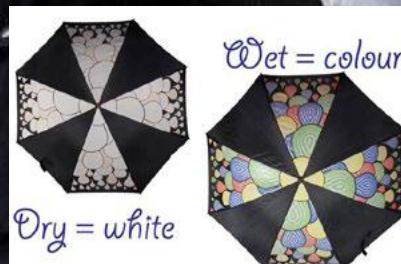
Sota Ghar Color House believes that the industry will experience a new change in the manufacturing process, strategy and sustainable development that would be brought by the Textile Today Innovation Hub.

Becoming a part of this 'Innovation Hub' Textile Today Associates will not only help the platform work effectively but also enable partners to place the platform's knowledge, communication, and networking leverage on the market as their innovation-driven business.

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Nexia Engineering launches 'state of the art' technology for reducing time, energy & environmental impact

Nexia Story

Nexia & De Franceschi is an Italian group, leader for the production of excellent washing and dyeing industrial machines of garment finishing since 1871, point of reference for industrial laundries, major industries, hospitals, hotels and textile industry. All our products are made in Italy and provided with the Green Label, document that aims to identify the energy and environmental performance of textile machinery.

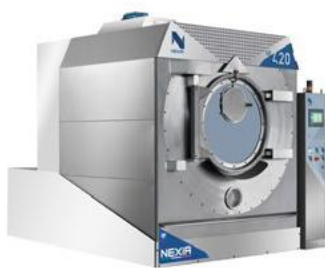


Figure 1: Nexia NS 420.

Nexia Engineering is now proud to announce the arrival of this innovative and exclusive system. With "state of the art" technology, multiple washing options are available under an all-inclusive "start" button, just one cycle which not only reduces the environmental impact but also significantly lowers time and



Figure 2: Nexia high-speed extractors-Nd 420.

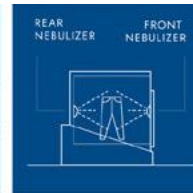
Ndrop double nebulizer



Nexstone



Wet & dry ozone processing



for the rinsing of garments between one treatment and the next, and with just one load/unload only. The wash cycle is therefore uninterrupted

energy consumption.

Thanks to Nexia altogether, environmental objectives are impressively ambitious: water consumption reduced by up to 85%, the use of chemical products lowered by as much as 50% and energy consumption lessened by up to 40%.

OZONE, wet and dry process, ozone processing exploits ozone in synergy with water as bleacher and powerful sanitizer.

NEXSTONE, Stone free abrasion, an exclusive and unique patented system whereby textiles are washed without the use of pumice stone, Nexstone also allows for the reduction of waste emissions as well as limiting water consumption.

NDROP DOUBLE FRONT AND REAR NEBULIZER, it increases load capacity and simultaneously reduces water consumption per garment by at least 85% (in relation to latest market technology).

The All Together System puts these treatments into one High-speed extractor Nexia NS420, a washing system complete with spin cycle. This allows

leading to a more fluid and dynamic process with better results.

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There is no improvisation when it comes to our products! There are no casual choices! There is only constant research in our engineering laboratories together with solid experience in the denim industry. In this, Nexia is a 100% guarantee, Made in Italy.

S.M. Sumon, CEO of Glorious Tech BD (Exclusive Distributor of Nexia Italy), is currently representing Nexia Italy as Country Manager in Bangladesh. Sumon is a young promising leader and serving the washing sector around a decade. He is technically very sound & has vast knowledge in business development & promotion. He also developed a sound technical team for all kinds of service & support.



Figure 3: NEXSTONE, Stone free abrasion, an exclusive and unique patented system whereby textiles are washed without the use of pumice stone, Nexstone also allows for the reduction of waste emissions as well as limiting water consumption.

ZDHC releases the CMS Technical Industry Guide

ZDHC releases the CMS Technical Industry Guide to harmonise expectations across Brands and support Suppliers in the implementation of sustainable chemical management.

ZDHC Story

The release of the ZDHC CMS Technical Industry Guide completes the ZDHC Chemical Management System (CMS). Its first part was released last year May, the CMS Framework, outlining the minimum requirements of a CMS. With this second document, the CMS Technical Industry Guide supports the practical part of implementation of the ZDHC CMS within the supply chain.

A sound sustainable chemical management system reduces impacts on the community, broader environment and protects worker safety.

"The ZDHC CMS Technical Industry Guide is our effort to provide simplistic, structured and practical guidelines to Manufacturing Facilities to develop their system to manage chemicals to fit their operations and needs, aligned with the ZDHC CMS Framework. Brands, as well as Auditors, should use the document to harmonise the expectations of a ZDHC CMS and adopt it as the standardised industry approach to facilitate its implementation by Suppliers," said Prasad Pant, South Asia Director, ZDHC.

In creating the CMS Technical Industry Guide, ZDHC aims to harmonise the brands' expectations towards suppliers. Throughout the development, ZDHC contributors were involved in extensive reviews to address their needs and incorporate



feedback.

The ZDHC CMS Technical Industry Guide provides the basis for Suppliers to tailor and implement their sustainable chemical management plans to meet the harmonised expectations, whether tanneries, dye-houses, mills, printers or footwear assembly units, or another kind of facility.

"The ZDHC CMS Technical Industry Guide will now provide the basis on which we will be able to ensure that our chemical management system meets and exceeds industry standards, and from this basis, we will continue to drive improvements. I see this document as essential guidance for all textile Manufacturing Facilities around the world," said Jimmy Summers, VP Environment, Health, Safety & Sustainability, CSO, Elevate Textiles.

As usual, ZDHC will facilitate the roll-out (of the CMS Technical Industry Guide) within its community.

Adding to the Supplier to Zero platform's extensive resources, the ZDHC CMS Technical Industry Guide is now integrated and provides supporting implementation templates.

Approved Training Providers will offer in-depth training at the ZDHC Academy, the global online training platform for sustainable chemical management. Planned for the third quarter of this year, the training schedule will be announced closer to date.

The week following the release, ZDHC expects to host the first public webinars to introduce the ZDHC CMS Technical Industry Guide via its Event page.

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Promoting sustainability by examining the possibility of using bio-mordants in natural coloration with teak dye extract

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Abstract:

The objective of this study was to promote sustainability by offering natural dye extracted from teak sawdust and by replacing conventional mordants or metallic salts with bio-mordants: aloe vera and banana sap. This experimentation further dug deep into analysis of dyeing criteria with respect to controlled variables (the dyeing recipes, time) and independent variable (temperature).

To be exact, the fabric samples were simultaneously mordanted and dyed in 1:10 M:L dye bath. The application of bio-mordant was carried out by three manners; first one was only for aloe vera, second one for banana sap and third for the mixture of both. The three dye bath was used once at 70°C and again at 100°C for 60 min.

Then the color fastness properties and CMC test were done to determine the changes in the properties of the samples developed under different parameters. The tested results had shown promising effects on the fastness properties of dyed samples and thus promoting a sustainable scope of dyeing.

Keywords: Teak dye; Bio-mordants; Color fastness properties; CMC; Sustainability.

1. Introduction

Sustainability is trending in the field of research nowadays. Like wastes from dyeing industries are one of the greatest threats to rivers in countries like Bangladesh (Chowdhury, et al. 2020). Effluent Treatment Plant (ETP) costs a fortune to a dyeing factory.

It has been reported that about 90million taka is spent on the chemical ETP process (Miah, 2012). Though it is a seemingly impractical approach to eradicate all the existing technologies, dyeing industries need to take baby steps to adopt

sustainable technologies to survive in this ever-changing era of technologies.

What this project offers is an idea soon to be turned into innovation as time and tide always favors adaptation. In 2016, textile industries in Bangladesh generated around 217 million cubic meter of wastewater which is expected to be 349 cubic meter, assuming bringing up a disastrous effect of the rivers (Hossain, et al. 2018).

Natural dyes have been thought to replace the synthetic dyestuffs in smaller to greater levels. Several sources such as onion skins, turmeric, heena, amla, marigold, carrots, spinach seeds, red and green cabbages etc. have been tested and positive results are found by researchers as potential natural dyes (Bhute, et al. 2012).

Teak sawdust can be one of the potential natural dye sources contributing in the movement of natural coloration. Tectona grandis aka Teak is local to Southeast and South Asian countries such as Sri Lanka, India, Bangladesh, Malaysia, Indonesia, Myanmar and Thailand. Also the tree is cultivated throughout Africa (Sivamani, et al. 2020). It possesses an astonishing golden color (Derkyi, et al. 2009).

Also it has been proven that teak sawdust has antimicrobial properties (Arief, et al. 2014). Researchers and industrialists are trying to make wearable antiviral, antibacterial, antimicrobial in movement of finding any ways possible to reach the milestone by defeating harmful micro-organisms and thus entering the era of enriched technical textiles (Karim, et al. 2020).

Teak has seldom been subjected to experiments regarding its dyeing properties. If its dye shows ample properties, teak dye will have a great deal of applications from dyeing regular wearable to

technical textiles like protective textiles (e.g. PPEs).

This experiment also rediscovers bio-mordants; aloe vera and banana sap to be exact. Most of the researchers emphasized on the effect of synthetic mordant (Copper sulphate, aluminum sulphate, potassium dichromate and lead acetate etc.) (Nilani, et al. 2008).

Aloe vera (*Aloe barbadensis* Miller), is a well acclaimed natural mordanting agent (Zubairu, et al. 2015). Aloe vera is known to have increased fastness properties of natural dyes just fine like other metallic mordanting agents (Ratnapandian, et al. 2017). The special short-stemmed plant's inner leaf gel is said to have antimicrobial properties. This has been proven by performing screening methods (Habeeb, et al. 2007).

Aloe vera has been described as an antibacterial agent (Habeeb, et al. 2007). According to a recent research aloe vera also possesses burn wound healing effect, immuno-modulatory effect, anti-diabetic effect, anti-oxidant effect, anticancer effect, hepato-protective effect, antiviral and antiulcer effect (Laxmipriya, et al. 2015).

Another noteworthy natural mordanting agent is banana sap (Dhar, et al. 2017). The pseudostem of banana (*Musa paradisiaca*) has been used in some countries to make qualitative bio-products such as fiber to make yarn, fabric, apparel and fertilizer, handicrafts, bio-chemicals, paper, fish feed, candy and pickles etc. (Mohiuddin, et al. 2014).

In traditional uses, banana extract is used as a mordanting agent or brown-gold color dye for clothes and fibers (Somana, et al. 2010). The Banana pseudo-stem sap has some special properties relating to various phenomena such as browning of fruits after harvesting, permanent staining of cloth and fibers, antioxidant, antimicrobial, and anti-hemorrhagic properties (Kumara, et al. 2014).

This study was designed to use traditional aqueous extraction method for extracting dyes from teak saw dust. Then extracted dyes applied along with extracted bio-mordants at different parameters. Finally, various fastness properties have been evaluated to find out the performance of individual mordants in natural coloration.

2. Methodology

2.1 Materials

Following items were required to perform the experiment.

- i) Teak sawdust
- ii) Aloe vera
- iii) Banana stem
- iv) RFD fabric (twill fabric)

2.2 Machinery

Following machineries were needed to test the samples.

- i) Washing machine
- ii) Crock meter
- iii) Spectrophotometer (Datacolor 800)

2.3.1 Extraction of teak dye

About 1.1kg of teak sawdust was mixed in 2000ml water. The solution took up a darker shade. Then the solution was heated and stirred simultaneously on the stove for 3 hours to extract color from the sawdust.

The aqueous solution later caught a dark prune shade. It was then cooled down at room temperature and filtered to store in a bottle.



Figure 1. Extraction of teak dye.

2.3.2 Extraction of aloe vera

Two aloe vera leaves were freshly cut and then its external skin was peeled off. After that, the leaves were cut into small pieces. The juice was extracted by blending the small pieces using a blender. The juice was light olive in color. Then it was stored below room temperature.



Figure 2. Extraction of aloe vera.

2.3.3 Extraction of banana sap

The stem of the banana tree was collected. The stem was then cut in small pieces and then blended using a blender. This gives a maroon colored banana sap. Finally, it was stored below room temperature.



Figure 3. Extraction of Banana sap.

2.3.4 Preparation of dye bath with mordants

Simultaneous mordanting method was adopted where the fabric would be both treated with mordants and dyes at the same time. Three different types of dye bath were prepared to get a variety of results.

Table 1: Recipe of dye bath preparation with mordants				
Dye Bath	RFD fabric	Aqueous solution of teak dye (ml)	Mordants (ml)	Dyeing condition (°C)
For first dye bath	10	180	20 (Aloe vera juice)	60 min @ 70°C 60 min @ 100°C
For second dye bath	10	180	20 (Banana sap)	60 min @ 70°C 60 min @ 100°C
For third dye bath	10	180	10 (Aloe vera juice) + 10 (Banana sap)	60 min @ 70°C 60 min @ 100°C

All the samples were washed in hot water (with or without 0.5g/L detergent) after 5 minutes of cooling right after dyeing.

Table 2: Identification of samples			
Sample	Mordanted with	Dyeing Condition	After wash
A1	Aloe vera	70°C for 60 min	No
A2	Aloe vera		Yes
B1	Banana sap		No
B2	Banana sap		Yes
C1	Aloe vera+Banana sap		No
C2	Aloe vera+Banana sap		Yes
D1	Aloe vera	100°C for 60 min	No
D2	Aloe vera		Yes
E1	Banana sap		No
E2	Banana sap		Yes
F1	Aloe vera+Banana sap		No
F2	Aloe vera+Banana sap		Yes

3. Result and Discussion

3.1. Evaluation of color fastness properties to wash

From table 2, it can be seen that change in color

Sample	Change in color	Color staining					
		Acetate	Cotton	Polyamide	Polyester	Polyacrylic	Wool
A1	3	4/5	4/5	4	4/5	4/5	4
A2	3	4/5	4/5	4	4/5	4/5	4
B1	2/3	4/5	4/5	4	4/5	4/5	4
B2	3	4/5	4/5	4	4/5	4/5	4
C1	3	4/5	4/5	4	4/5	4/5	4
C2	3	4/5	4/5	4	4/5	4/5	4
D1	2/3	4/5	4/5	4	4	4/5	4
D2	3	4/5	4/5	4	4/5	4/5	4
E1	2/3	4/5	4/5	4	4/5	4/5	4
E2	3	4/5	4/5	4	4/5	4/5	4
F1	3	4/5	4/5	4	4/5	4/5	4
F2	3	4/5	4/5	4	4/5	4/5	4

due to wash is moderate for almost all the samples except for B1, D1 and E1 who's properties are slightly fair. In case of the color staining properties of the samples, the data mirrors each other except for D1.

Its staining to polyester is very good while rest of them is excellent. This shows that dyeing with aqueous solution of teak and mordanting with aloe vera and banana sap separately and together didn't vary at the attribute of color staining.

3.1. Evaluation of color fastness properties to rubbing

Table 4. Rubbing fastness properties of dyed sample		
Sample	Dry rubbing	Wet rubbing
A1	5	3/4
A2	5	3/4
B1	4/5	3/4
B2	5	3/4
C1	5	3/4
C2	5	4
D1	4	3/4
D2	4/5	3/4
E1	4	3/4
E2	4/5	3/4
F1	5	3/4
F2	5	3/4

The table 3, features how the samples reacted to crock meter. Sample D1 and E1 has shown very good fastness properties towards dry rubbing, B1, D2 and E2 has shown excellent properties. Rest of them has outstanding color fastness to dry rubbing.

The color fastness to wet rubbing was not as great as those of dry rubbing. Good properties were found among all the samples except for C2. This proves that the color really sunk into the sample when it was mordanted with both aloe vera and banana sap and didn't have more color to lose like rest of the samples.

3.2. Evaluation of color strength

Table 5. Color strength comparison of samples from washed without detergent to washed with detergent

Sample comparison	Color strength
A1 to A2	83.06%
B1 to B2	84.21%
C1 to C2	75.22%
D1 to D2	75.31%
E1 to E2	69.22%
F1 to F2	65.73%

The samples' color strength from washed without detergent to wash with detergent were tested and the table provides the data. It shows most strength was recorded for B1 to B2 where B2 lost only 15.79% color. This is followed by A1 to A2, losing 16.94%; D1 to D2, losing 24.78%; C1 to C2, losing 24.69% and E1 to E2, losing 30.78% color respectively. The least strength was recorded for F1 to F2 and it lost 34.27% color.

This shows that overall samples dyed in 100°C took up a deeper shade, but lost it immediately when washed in boiling water with detergent. On the contrary, the samples dyed in 70°C didn't lose much color in comparison to washed in hot water to wash in hot water with detergent. Among the samples, the ones mordanted with only banana sap shows more promising properties than other one.

3.3. Measurement of color difference

Table 6. Different color coordinates of the samples									
Standard Sample	Trial Sample	Ill/Obs	DL*	Da*	Db*	DC*	DH*	DE*	Remarks
A1	A2	D65/10 deg	1.9	-0.56	-1.8	-1.88	0.07	2.67	Lighter + more yellow
		F11/10 deg	1.81	-0.52	-2.06	-2.13	0	2.79	
B1	B2	D65/10 deg	5.83	-1.02	-3.28	-3.43	0.16	6.77	Lighter + more green
		F11/10 deg	5.68	-0.98	-3.83	-3.95	0.03	6.92	
C1	C2	D65/10 deg	2.62	0.51	-2.34	-2.16	-1.03	3.55	Lighter + more red
		F11/10 deg	2.59	0.28	-2.69	-2.56	-0.87	3.75	
D1	D2	D65/10 deg	3.2	-0.94	-2.11	-2.29	0.35	3.95	Lighter + more yellow
		F11/10 deg	3.09	-0.89	-2.43	-2.57	0.27	4.03	
E1	E2	D65/10 deg	9.81	-1.94	-3.84	-4.17	0.8	10.23	Lighter + more green
		F11/10 deg	9.28	-1.72	-4.49	-4.78	0.15	10.45	
F1	F2	D65/10 deg	4.58	-1.05	-2.8	-2.98	0.2	5.47	Lighter + more yellow
		F11/10 deg	4.42	-0.93	-3.2	-3.33	0.04	5.53	

The table gives the color coordinates of all the samples tested by a spectrophotometer. The table 5, reveal that both 70°C and 100°C treated banana sap mordanted sample shows greater color difference than others.

So, due to after wash with detergent banana sap treated samples lose its color. The samples mordanted with only aloe vera has shown the best results and is followed by mordanted with mixture of banana sap and aloe vera.

Conclusion

Once everlasting Buriganga River is now dead and more rivers like Turag, Shitalakshya, Karnaphuli etc. are soon to follow. One of the major catalyst leading to innavigability of rivers are dumped chemicals

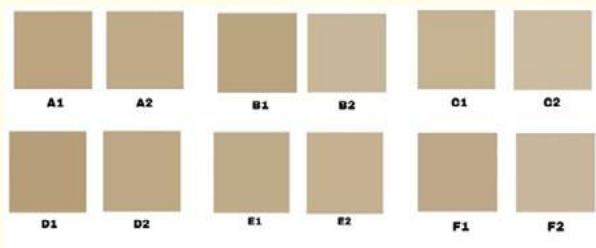


Figure 7. Chroma of A1, A2, B1, B2, C1, C2, D1, D2, E1, E2, F1 and F2.

and untreated wastewaters of dyeing industries, accelerating climate change.

In this experiment, the research outcome is quite hopeful. The first outcome of the research is that teak sawdust displays a characteristic tan-gold luster that is readily soluble in water.

This opens a wide market and wider field of opportunities for dyeing industry owners to use it to dye and produce from light brown, creamy, khaki, tan, tan-gold to all the way to chocolate colored fabric.

Moreover, aloe vera and banana have been subjected to numerous studies due to their efficiency as mordants. What's astonishing is both of the ingredients possess antimicrobial, antiviral and antibacterial properties which adds to their qualities.

Finally, this project is an icon to sustainable dyeing movement as the whole process was done with natural dyes and mordants and zero chemicals or metallic salts were used.

As a result, virtually zero wastewater was produced as the aqueous solution of dye would disperse and mingle into water as soon as it was released into the environment.

This opens a wide door to escape the devastating effects of climate change in the foreseeable future. As the current dyeing industries are maiming our rivers with their untreated wastewaters, releasing

cancer-creating metal sludge, adopting natural dyes and mordants even a little will generate positive results in a global scale and will contribute to our country's achieving sustainable development goals which will be a requirement by 2030.

4. Acknowledgement

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7th season

7th Season Key Facts

(Up to Now)

40+

Campus
Campaign

1214

Registered
Participants

150+

Experts
Engagement

35

Events
Organized

114

Transformation
Leaders Found

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Company
Engagement

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A study of effect of COVID-19 on textile curriculum of Bangladesh

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Md. Firoze Khandakar (Academic Supervisor), Principal, Sheikh Kamal Textile Engineering College

Abstract

The study engaged a mixed-method methodology to find out the effect of COVID-19 on the textile curriculum of Bangladesh. The quantitative part engrossed on if there was a substantial effect of COVID-19 on the textile curriculum of Bangladesh and if there was a substantial change among offline and online classes. In the quantitative part, 225 students and in the qualitative part 14 teachers took part as the samples.

Quantitative data were evaluated by SPSS and qualitative data were evaluated by persistent proper qualitative data analysis techniques. The quantitative results specified that there is a substantial effect of COVID-19 on the overall textile curriculum of Bangladesh. The results also proposed that there is a substantial alteration between online practical demonstrations at the textile lab.

The interview or qualitative data analysis specified that COVID-19 has a huge effect on the textile curriculum of Bangladesh, especially since both educators and learners are not ready in terms of efficiency and flexibility of online classes. Moreover, the majority of educators think that online practical activities cannot be an alternative to physical practical classes.

Introduction

COVID-19 epidemic has created serious damage in all educational institutions and for both students and teachers. Including textile students, around 40 million students have been affected in Bangladesh. The government and UNESCO suggested online classrooms to overcome this unprecedented problem by using online or digital media.

Due to this pandemic, like all other curricula, the textile engineering curriculum has been severely affected, especially practical-based learning. However, right now all textile institutions in Bangladesh are mainly focusing on theoretical

classes. Due to some limitations, it is not possible to conduct practical classes by using a digital platform.

But science student must do their practical class for a realistic learning process. Therefore, it is high time to find an effective alternative way of conducting lab classes by using a digital platform.

Some researchers agreed that online lab classes offer an enormous advantage in engineering practical-based learning and turns out to be an effective alternative to conventional lab classes.

On contrary, some of the researchers also indicated that it is not an effective way of conducting practical classes. Because of practical experience, clarification of concept, flexibility and repetition are missing in the digital platform. Also, several researchers pointed out that digital platform is greatly upgraded by using 3D and it helps students control and perform a test on actual material via the internet.

One of them also recommended that conducting the test in virtual lab classes are more productive than conducting the same test in conventional lab classes. The researcher believed that the efficiency of the lab classes depends on the student's interactivity.

Many researchers find it helpful to adopt new technology for the new generation. So, educational institutions need to adopt this chance of asynchronous learning to improve remote learning abilities that work well virtually in this epidemic situation.

Problem

As textile education is deeply focused on lab-based learning, which has a tremendous impact on the current employment market, it is important to deliver students the most suitable and realistic method of using a digital platform in this narrow condition. Due to the present unprecedented condition, in Bangladesh, very few studies have been found on the consequence of this unprecedented condition on the textile curriculum. Delicate attention has been made

to the textile practical online classes in this study.

Methodology

For this study, a mixed-method research approach through a survey of the students and a face-to-face interview of the teachers of different textile educational institutions of Bangladesh have been used. For qualitative methods, semi-structured interviews were set for the educators and quantitative methods, a questionnaire was set for learners.

Instrumentation

For in-depth study, a total of 12 closed-ended questions was preferred for learners. By using 5-point Likert scales ranging from strongly agree (5) to strongly disagree (1) the questions were dignified. Five experience experts panel from different universities inside and outside of the country participate in this research and all of them give their valuable opinion and suggestions on the questionnaire.

For qualitative research, a semi-structured interview was chosen due to the COVID-19 pandemic. Five experienced experts' panel from different universities inside and outside of the country give their suggestions and opinions for 5-open-ended questions.

Data Collection

In quantitative research, a total of 225 undergraduate students from 14 private and public textile

universities/colleges participated. Due to this COVID-19 pandemic, this survey was conducted through the GOOGLE form (G-form). By using social media platforms like E-mail, WhatsApp, Messenger and Facebook) G-form links were shared with the partakers. The avg. call duration was around 15 minutes.

A total of 14 educators from ten private and public textile institutes were interviewed. A permission agreement was taken at the commencement of the interview.

Data Analysis

The quantitative data were evaluated through a two-tailed one-sample t-test at a 95% confidence interval using an IBM SPSS (version 26) software. The qualitative data were recorded and analyzed using persistent proper qualitative data analysis techniques.

Results and Discussion

Quantitative

The data were evaluated through a one-sample t-test (two-tailed) using IBM SPSS (Version 26) software. The t-test indicates that the majority of the learners think there is a significant effect of COVID-19 on textile education. They presented their greater trouble to the conversion in terms of an online class, flexibility to it and affectivity of the virtual guidelines.

In the following table 1, the response of the survey is given in 5 point Likert scales:

Table 1. Responses to the survey						
Q. No.	Statements	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	Online class is boring	13.3%	31.1%	28.4%	23.6%	3.6%
2	Online is the only possible medium of instruction during COVID-19 pandemic	26.7%	55.1%	9.3%	8.0%	0.9%
3	Online classes have paved the ways for alternative option in case of unexpected class closure	16.9%	53.3%	23.6%	4.9%	1.3%
4	Interactive activities among students have increased significantly in online classes	4.9%	40.9%	20.4%	28.4%	5.3%
5	I get more time to study at home due to online classes. Therefore, an online class is time-saving	22.7%	43.6%	13.3%	13.8%	6.7%
6	Teachers respond positively if I request a quick online meeting	10.7%	35.1%	35.1%	13.8%	5.3%
7	Visual representation of practical work is a good choice in online class	7.1%	30.2%	16.4%	35.6%	10.7%
8	Improved 3D images of textiles and related materials are good alternatives for practical works	10.7%	44.4%	16.4%	21.3%	7.1%

Table 1. Responses to the survey						
Q. No.	Statements	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
9	I enjoy online visuals than doing things practically in the lab	2.7%	12.0%	7.1%	48.4%	29.8%
10	Online exam is not a good choice	30.7%	24.9%	17.3%	20.9%	6.2%
11	Textile lecture is inconvenient in online than in face to face class	16.9%	37.3%	17.8%	22.2%	5.8%
12	Internet disruption is a problem in online class	65.8%	27.6%	1.8%	0.9%	4.0%

The graph below shows how many of the 225 participants reacted to any part of the 5 points Likert scale and what percentage of the response was given.

In the above response, it is cleared that virtual class is not a good choice for the textile curriculum. However, students are positive about interactive activities and video lectures. But it is proved that there is a significant difference between offline and online lab classes and also learners are not like the idea of online examination.

Qualitative

In this study, the qualitative research method is used to increase the effectiveness of running virtual theoretical classes and to find alternative ways of piloting lab classes.

In question number-1, to the question about the duration of the online class: In reply 5 of them suggested the range should be 1.5-2 hour and the rest of them suggested that the online class duration should be a maximum of 1 hour.

So, the duration of the class should be appropriate for the learners as it is a very new method for all educators and learners. Both educators and learners should feel calm with the usability of this method.

In question number-2, the question about how they increase the activity of the learners' increases in the class? In reply, all of them suggested to arranging presentation, quiz, assignment, assessment and taking feedback from the learners and also arranging extra curriculum activities also increase learners' activity.

The ideas of increase the activity of the interviewees are very old-fashioned as there was nothing innovative that specifies that the textile curriculum in Bangladesh isn't yet ready to squeeze the increase the activity in the online class more innovatively.

In question number-3, to the question about online lab activities: In reply 5 of them completely disagree to do the lab class online and the rest of them suggested that it should be postponed but if the situation of the pandemic goes long then they are interested to do the lab class through online.

Rests of the ensuing questions were answered by those educators who support online practical activity (if this COVID-19 pandemic condition extends long).

In question number-4, to the question as to how they conduct their online lab class online? In reply, they all are interested to show their learners lab-related videos from YouTube (most of the relevant videos are available) and also if needed the educators to attend the lab physically and making video tutorials for the practical class. Also showing an animation of different gearing diagrams and then learners should submit their assignment.

Lastly, to the question about the textile practical lab in an online class: Summarizing their responses interviewer found that as the textile lab is mostly mechanism-based so there is only one option left to show them an animated video of the mechanism.

All the interviewees measured 3D images and practical videos as the most appropriate method of making the online practical class more simulated. This specifies the prominence of ingenuity in the 3D images and videos for the learners in the online practical classes.

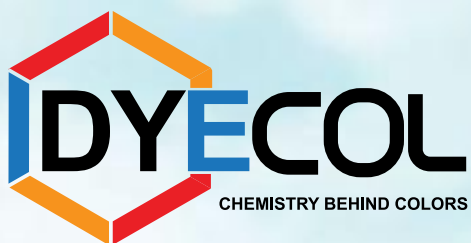
Conclusion

The COVID-19 epidemic has given an awful shock to all education of Bangladesh. This study indicates that learners and educators of various public and private textile institutions in Bangladesh are not interested in these fundamental changes. Educators are more cynical on the affectivity of online practical classes as practical works cannot be substituted by virtual teachings.

Yet, they are optimistic about learning from a new model of the digital platform and suggested more research on how to make the online practical class more effective and interactive.

Acknowledgment

The authors would like to acknowledge the contribution of all the experts, advisors, supervisors and all the participants. Finally, a huge shout out to the Textile Today authority for their all necessary supports throughout the whole project.



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Comparative study between cationic cotton dyeing and conventional dyeing: An approach towards sustainability

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Abstract

The textile dyeing sector is one of the most environmental polluting sectors in Bangladesh. The conventional dyeing method includes using a huge amount of water, salt, soda, and other chemicals. Due to the hydrolysis of reactive dye, a huge amount (almost 30 to 40 percent) of the dye remains unfixed in the dye-bath.

All the chemicals and unfixed dye make the wastewater more complex to treat in ETP (Effluent Treatment Plant).

All the textile factories are looking for a sustainable and cost-effective dyeing method for surviving in the upcoming fourth industrial revolution, where sustainability will be the top priority. Cationic cotton dyeing is a dyeing method where it removes the necessity of salt, reduces the water, chemicals, auxiliaries' use.

The cationization process eliminates the hydrolysis of dye and reduces the necessity of wash-offs. In this research work, the viability and feasibility of cationic cotton dyeing for the industrial and commercial-stage were tested in terms of quality, quantity, and cost.

The treatment of cationization with the chemical CHPTAC (3-chloro-2-hydroxypropyl trimethylammonium chloride) was performed at different concentrations. The color strength was measured after completing the dyeing process, which was 5% to 25% better compared to conventional dyeing.

The colorfastness properties were measured, which

was improved compared to conventional dyeing. The bursting strength of the fabric was tested to check the impact of cationization on strength.

For measuring the environmental impact, BOD, COD, TDS, DO, PH of effluent was tested, which was significantly improved. Finally, the cost of cationic cotton was calculated, which was challenging for commercial application.

Keywords: Cationization, color strength, colorfastness, sustainability

Introduction

The reactive dye is most commonly used for dyeing cellulose fiber (cotton) because of its wide range of use, better color yield, and good fastness properties. The reactive dye is anionic in nature (Lewis DM, 2007) (D.P. Chattopadhyay, 2007), while the cellulose fiber comes in contact with water, it produces a small negative charge as the hydroxyl group presents in the cellulose structure get ionized. (Lewis DM, 2007) (D.P. Chattopadhyay, 2007).

During the dyeing process, the same charge of the material (cotton fabric) and reactive dye result in repulsion which ultimately introduces the necessity of electrolyte (Glauber's salt or common salt) to continue the process (Broadbent, 2001).

When the electrolyte is used for the dyeing process 30 to 40 percent dye is hydrolyzed, which reduces the efficiency of the process. The electrolyte used in the dye-bath remains unchanged after the dyeing process.

At the same time for the fixation of reactive dye

alkali (soda ash) is required. All the chemicals, hydrolyzed dye make the wastewater more complex to treat in ETP (Effluent treatment plant) and increase the cost of the process (Burkinshaw, 2002) (Burkinshaw R. S., 2003).

Conventional dyeing is less efficient due to the hydrolysis of dye, poor exhaustion, and the necessity of more wash offs (D.P. Chattopadhyay, 2007).

To reduce the problem, the material (cotton fabric) or the reactive dye needs to be different like the charge (anionic/cationic)

Cationization is the process where cellulose polymer reacts with a different type of substituted amino compounds, to impart positive sites in the polymer structure. By this process, the cotton fiber becomes cationic from anionic nature.

As a result, the cotton can easily create an ionic bond with the anionic dye (reactive dye) (Tabba, 2006) (M. Montazer, 2007).

The introduction of positive sites in the cotton structure eliminates the necessity of electrolyte, improves the dye exhaustion percent, reduces the number of wash-offs (Fraze, 2002) (M. Subramanian Senthil Kannan, 2006).

In this research work, CHPTAC (3-chloro-2-hydroxypropyl trimethylammonium chloride) was used for the cationization process at different concentrations. CHPTAC is most popular for cationization because of improved dye exhaustion, better color yield, and more environmentally friendly (Mohamed Hashem, 2003) (Mehmet Kanik, 2004).

To check the viability and feasibility of the commercial approach, the color strength, colorfastness, bursting strength, and effluent quality were tested and compared with the conventional dyeing. The processing cost was also compared with conventional dyeing.

Materials and methods

Fabric

100% cotton knit Single Jersey with GSM 160 was used. The yarn count was 26s and the stitch length was 2.9 mm

Chemicals

The cationization chemical CHPTAC (3-chloro-2-hydroxypropyl trimethylammonium chloride) was collected directly from Dow Chemical Bangladesh Private Limited. This chemical is commercially available in the name of 'CR 2000', which is a 65% aqueous solution of 3-chloro-2-hydroxypropyl trimethylammonium chloride. Sodium hydroxide (NaOH) was used as a catalyst for CHPTAC in the cationization process.

Other chemicals include wetting agent, sequestering agent, sodium hydroxide, hydrogen peroxide,

stabilizer, peroxide killer, sodium sulfate (Na_2SO_4), sodium carbonate (Na_2CO_3), Bio polishing enzyme (Enzymel-2500), acetic acid, a leveling agent of commercial-grade were also used. Reactive Dye from Novacorn was also used throughout the project.

Pre-treatment of fabric

Scouring and bleaching:

The fabric was scoured and bleached at the same time with the below recipe

Table 1: Scouring and bleaching recipe		
Chemicals name	Amount	
Sequestering agent	1 g/l	Temperature 90°C
Wetting agent	1 g/l	
Detergent	1 g/l	Time 60 minutes After that peroxide killer (0.15 g/l) was used, neutralized with acetic acid (1 g/l), and washed two times.
Caustic soda	4 g/l	
Hydrogen peroxide (50%)	5 g/l	
Stabilizer	2 g/l	

After scouring and bleaching the Bio polishing enzyme (Enzymel-2500) was used at 0.25 g/l. The process was continued for 60 minutes at 55°C temperature in an acidic medium (PH 5.5). After that temperature was raised to 75°C to kill the enzyme.

Conventional dyeing

The pre-treated fabric was dyed for different shade percentages at 60°C temperature with a wetting agent 1 g/l, sequestering agent 1 g/l. The amount of salt and soda is measured according to shade percentage. The fabric was normally washed, hot washed and rinsed. (See table 3)

Cationic cotton dyeing

The pre-treated fabric was first cationized using CHPTAC at different concentrations. Caustic soda was used according to the concentration of CHPTAC. The fabric was immersed in the solution of 1 g/l wetting agent, CHPTAC, and Caustic soda.

The temperature was raised to 90°C and run for 25 minutes. Then the bath drained and checked the PH. 0.5 g/l acetic acid was used if the PH was more than 7.5.

For dyeing cationic cotton, 1 g/l leveling agent, 0.5 g/l sequestering agents, 1 g/l wetting agent was used. Then the dye was dosed and run for 60 minutes. After that soda was dosed and run for 60 minutes. After that bath was drained and hot-washed fabric. (See table 3)

Measurement of color strength (K/S)

The value of color strength was directly collected from Datacolor 650 Spectrophotometer. The build-in software in a computerized color matching system

gives the k/s value in all visual spectrums. The comparison of shade (darker/lighter) was also found from the device.

The reflectance (R) value of dyed fabric at the maximum wavelength of absorbency (λ_{max}) was found and color strength was calculated through the Kubelka Munk equation.

The Kubelka Munk equation... $K/S = \frac{1-R}{R^2}$

Where R is the reflectance, K is absorbance, and S is the scattering.

Testing - Methods - Instruments

Effect of cationization on color strength (K/S)

Table 3 shows that the color strength of the cationized sample is 5 to 25 percent more than the conventional sample, which ensures better color yield. The concentration of CHPTAC is positively correlated with the value of color strength. The correlation between color strength and shade% can't be evaluated, it requires more trials and observations.

Effect of cationization on colorfastness properties

Table -4 shows that the color fastness to Wash, Rubbing (Dry), Perspiration (Acid) and Perspiration

Table 2: Testing standards and Instrument

Colorfastness to wash	ISO 105 CO6-A1S:2010	GyroWash
Colorfastness to rubbing	ISO 105 X12:2016	Crockmeter
Colorfastness to perspiration	ISO 105 E04:2013	Perspirometer
Colorfastness to light	ISO 105 B02: 2014, AIR COOL XENON, ARC LAMP	TruFade: Xenon Arc light fastness tester.
Bursting strength	ISO 13938-2, USED 7.3 cm2 dia	Pneumatic bursting strength tester
BOD (Biological Oxygen Demand)	In House (20°C temperature and five days)	BOD5 Incubator
COD (Chemical Oxygen Demand)	In House	COD Reactor
TDS (Total Dissolved Solids)	In House	TDS Meter
DO (Dissolved Oxygen)	In House	DO Meter

The P^H of the effluent was measured through a digital P^H meter.

(Alkaline) are exactly equal for conventional dyeing and cationic cotton dyeing. This can be interpreted as the ionic and covalent bond formation during the

Results and discussions

Table 3: Experimental sample design

Sample no.	Sample weight	CHPTAC (g/l)	NaOH 50% (g/l)	Salt(g/l)	Soda(g/l)	Shade%	K/S
Cat1	10 g	18	16	N/A	20	1.6	7.45
Cat2	10 g	18	16	N/A	20	1.6	7.35
Cat3	10 g	18	16	N/A	20	1.6	7.45
Cat4	10 g	18	16	N/A	20	1.6	7.70
Cat5	10 g	20	18	N/A	20	1.6	7.65
Cat6	10 g	20	18	N/A	20	1.6	7.20
Cat7	10 g	20	18	N/A	20	1.6	7.20
Cat8	10 g	20	18	N/A	20	1.6	7.60
Cat9	5 kg	18	14	N/A	15	1.6	11.3
Cat10	5 kg	20	16	N/A	15	2.3	14.5
Cat11	3 kg	30	18	N/A	20	4.5	22.3
Con1	8 g	N/A	N/A	40	15	2.0	7.50
Con2	8 g	N/A	N/A	40	15	2.0	7.30
Con3	5 kg	N/A	N/A	50	15	2.3	10.8
Con4	5 kg	N/A	N/A	80	20	4.5	21.8
Con5	10 g	N/A	N/A	40	15	1.6	7.15
Con6	10 g	N/A	N/A	40	15	1.6	7.20

* Bursting strength is over 600 kPa

** Blue wool scale up to grade 4

cationic and conventional dyeing is almost equal in strength.

Table 4: Test result												
AMPLE NO.	Bursting strength (kPa)	Wash	Dry Rubbing	Wet Rubbing	Perspiration Acid	Perspiration Alkaline	Light**	pH	BOD mg/l	COD mg/l	TDS mg/l	DO mg/l
Cat9	600*	4	4-5	3-4	4	4	4	11.2	460	1500	18130	5.43
Cat10	600*	4	4-5	3	4	4	3-4	11.2	420	991	14800	5.50
Cat11	236.9	4	4-5	4	4	4	3-4	10.6	390	838	6340	6.50
Con4	123.2	4	4-5	3	4	4	2-3	10.5	480	1258	49400	6.80

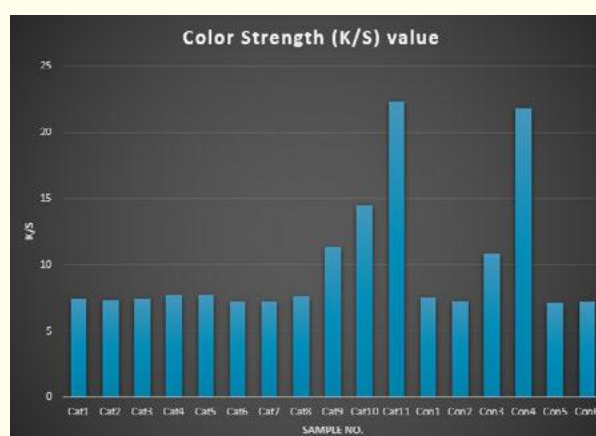
The color fastness property to Rubbing (Wet) is improved to 4 from 3 for cationic cotton compared to conventional dyeing. The better rubbing fastness for cationic cotton is the result of no unfixed dye in the fabric surface due to cationization. The color fastness property to light is also improved to 4 from 3 compared to conventional dyeing. This is due to better dye fixation and no disintegration of dye by the photon of light.

Effect of cationization on bursting strength properties

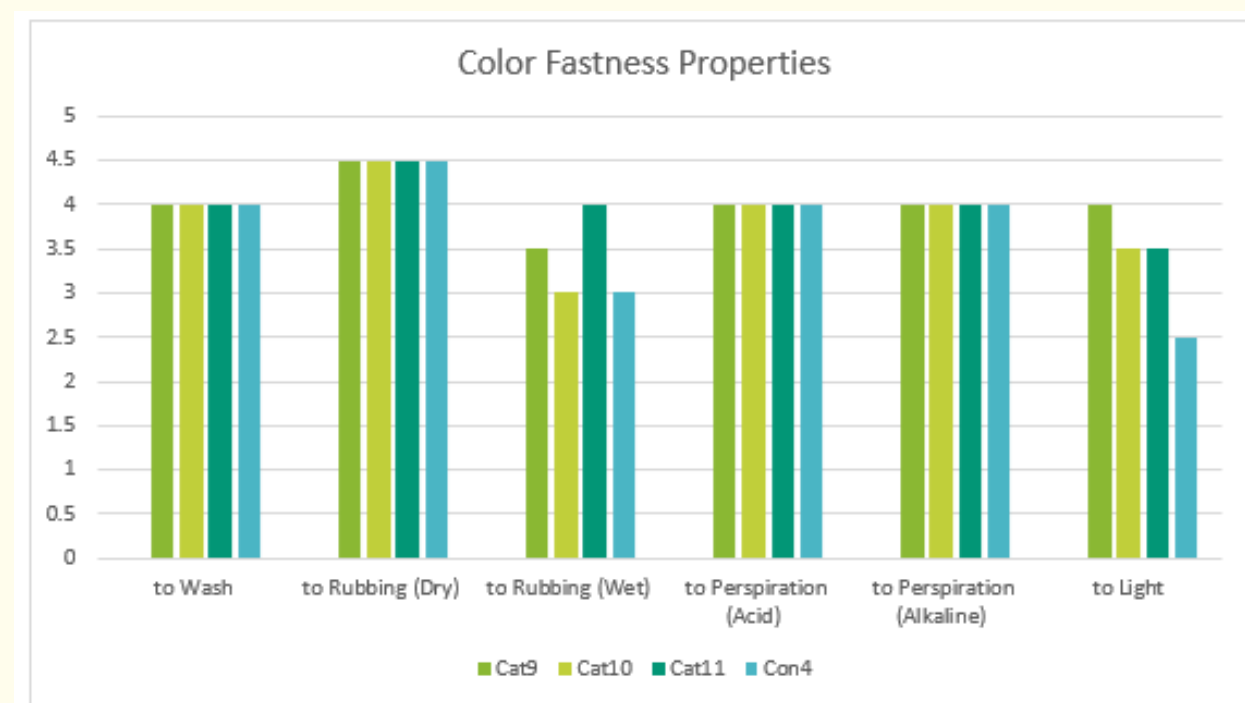
The table-4 shows that the bursting strength property for sample cat9 and cat10 is more than 600 kPa but the result of cat11 is three times lower than the cat9 and cat10. The bursting strength for conventional dyeing is unacceptable (123.2 kPa). No conclusion can be made from the data, it requires more trials and observation

Effect of cationization on environment

PH and DO (Dissolved Oxygen): Table-4 depicts



that the PH and DO of the effluent are almost similar for conventional and cationic dyeing. The pH value for cationic cotton dyeing can be improved by using less Soda Ash during dyeing. The value of Dissolved Oxygen is improved with the increase of cationization chemical concentration (CHPTAC)



Fabric: 100 kg, M:L=1:8, Shade percentage: 5%			
Topics/ Process/Operation	Conventional Dyeing	Cationic Cotton Dyeing	Savings(\$)/ Result
Pre-treatment	Constant/ fixed		\$0
Finishing	Constant/fixed		\$0
Processing time (Factory overhead and utility)	8 hours	9 hours	\$ (- 1.5)
CHPTAC	0	\$40	\$(- 40.0)
Caustic soda	0	\$2.7	\$(-2.7)
Water	7000 liters	6500 liters	\$0.1
ETP	HIGH	Low	\$2
Soda	CONSTANT/ FIXED		\$0
Salt	\$11	0	\$11
Dye	\$47	\$37	\$10
Normal total cost	\$160 to \$180	\$180 to \$190	Cost increase 10 to 15 percent

BOD (Biological Oxygen Demand)

The BOD indicates the degree of organic pollution in the effluent. From table -4, it is evident that the BOD value has decreased by up to 15% with the increase of CHPTAC concentration. The BOD value of cationized sample effluent is up to 18% less compared to conventional dyeing effluent. The less BOD value in the effluent indicates less environmental impact through the cationization process and better sustainability.

COD (Chemical Oxygen Demand)

COD is the measure of oxygen required for the oxidation of organic matter in the effluent. From the table-4, it is evident that the COD of the effluent has been reduced up to 40 percent with the increase of CHPTAC concentration. The COD of the first sample was 16 percent higher than the conventional dyeing.

The COD of the other two samples has been improved by 21 to 33 percent compared to conventional dyeing. This result shows that the cationization process reduces the amount of oxidizable organic materials in the effluent that will ultimately reduce the environmental impact.

TDS (Total Dissolved Solids)

TDS is the measure of all dissolved organic and inorganic substances (salt, mineral, and micro molecules) present in the effluent. It is evident from the table-4 that the TDS value decreases with the increase of CHPTAC concentration up to 65%.

The Cationization process reduces the TDS value by up to 87% as a result of salt-free dyeing and better

color exhaustion. The low TDS value means fewer impurities in the wastewater and low cost in the effluent treatment plant.

The cationization process has opened the door to reuse the wastewater by reducing the TDS by a significant amount. This is a turning point for environmental sustainability.

Cost calculation

Note: The costing is estimated, the actual costing is a commercial issue. The cost may change with time, type of machine, and operational excellence.

Conclusion

The cationization of cotton for commercial dyeing is a piloting project in Bangladesh. The result of the study shows that the cost of the total process will increase 10 to 15 percent, which is challenging for commercial applications.

Although the cationization of cotton gives better color yield, improves dye take-up, reduces water use, and reduces the ETP load, it is challenging because of the high price of cationization chemicals (CHPTAC).

In concern of sustainability cationization of cotton can play an important role in commercial dyeing because it ensures less environmental impact. Though the cost is slightly higher, the quality improvement and sustainability issue can offset the extra cost.

Further research and development can reduce the cost by improving the process/ product or substituting the costly chemicals with cheaper ones.



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Development of electrospun nanofibrous facemask from recycled PET bottle using Electrospinning technique

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Abstract

The present project depicts the formation and characterization of electrospun nanofibrous mat generated from the recycled PET bottle using electrospinning technique as well as introduce nanofiber facemask from this nano mat having features to inhibit viruses and bacteria.

The morphological structure, bonding behavior, and moisture management of the developed nano-mats were investigated by SEM, FTIR, MMT respectively.

The SEM analysis showed the homogenous and smooth fiber and FTIR ensure the presence of polyethylene terephthalate. Owing to high filtration performance, low toxicity, breathability, reusability, ecofriendly, and commercially viable this face mask is a time demanded product for Bangladesh.

Thus, the developed mats have great potential for use as a face mask in this COVID-19 pandemic situation. Besides, it will also decrease the environmental pollution caused by PET bottles. Furthermore, it will open a new window for protective textiles.

Keywords: electrospinning, PET, facemask, nanotechnology, protective textiles.

Introduction

The formation of nanofiber by electrospinning technique using natural, modified natural and synthetic polymers[1] has gained a great deal of interest over the decades for their applications in biomedical fields, such as wound dressing, tissue engineering, filtration media, and drug delivery due to their biocompatibility, biodegradation, low toxicity, high porosity, lightweight and, most importantly,

wide surface area[2].

The simple electrospinning configuration consists of four components: a syringe filled with a polymeric solvent, a metal needle, a kV power supply, and a metal collector[3].

Besides, Polyethylene terephthalate (PET) is one of the most commonly used synthetic polymers in the world and is the most preferred packaging material for drinks. However, according to Forbes Magazine, < 10 percent of PET bottle plastics are recycled in 2017. This means that over 90% of PET bottles have been disposed of or burned[6], posing significant environmental threats as they have existed in existence for many years and are made from dwindling oil resources[7].

Filtration plays a significant role in purifying and decontaminating the two essentials of life: water and air[12-14]. As the consciousness of associated health problems has risen, the need for more protection from airborne contamination and disease has also increased[8,15,16]. From this viewpoint, scholars' going to clarify the special and enhanced capacity that electrospun nanofibres have when used as an active layer in face masks[9]. Compared to common melt-blown filters, electrospun nanofibres have stronger protection against air pollutants, bacteria, and viruses such as COVID-19.[17-21]

Thus, the objective of this project is to manufacture antibacterial, anti-droplet, non-toxic, environmentally sustainable face masks using recycled PET.

Materials and methods

Materials

The PET bottles were collected and converted

into polymer chips in the local area of Gazipur city, Dhaka, Bangladesh. Trifluoroacetic acid (TFA) was sourced from Loba Chemical (India) and dichloromethane (DCM) from Merck, Germany. All the chemicals were of analytical grade and used without further purification.

Preparation of recycled PET solution

The prepared recycled PET bottle chips PET solutions were prepared in concentrations of 20wt.% (w/v) in the mixture of solvents DCM/TFA in the specific ratio. To proper dissolving, the PET polymer solution keep 24 hours at ambient condition. After that, the prepared solution is then transferred via a syringe (20 mL) to the pump.



Figure 1: The raw material of nanomat; PET bottle chips.

Electrospinning process of recycled PET nanofibrous mats

Nanofibers from the recycled PET polymer have been studied in the present study were produced by solution electrospinning technique (needle-based system). Initially, the collected PET bottle was washed perfectly with fresh water and dried in an oven at 400°C. Then the dried PET bottle was finely converted to chip form by a local machine and 20 gm PET chips were taken in a flask containing 80 ml TFA and 20 ml DCM. The flask was kept aside for 24 hours at ambient to ensure perfect maceration. In this study, electrospinning set-up consisted of a high voltage supply (20kV and 50 KV), a syringe pump (TL-F6, Tong Li Tech, China), a rotary drum collector (diameter-158mm, length-500mm, 500 rpm), a heater (0.5 kW) and 5 needles (20 Gauge). All the components were used as a single.

Characterizations

Measurement of moisture management

The moisture management property of the developed mat was evaluated by a moisture management tester (MMT) (M290, SDL Atlas, UK) according to AATCC 195-2009. Wetting time, absorption rate, maximum wetted radius, and spreading speed of inner and outer surface including accumulative one-way transport capacity (R) and



Figure 2: Trifluoroacetic acid (TFA), dichloromethane (DCM), and polymer solution

overall moisture management capacity (OMMC) were measured.

Morphological observation

The morphological orientation of nanofibers was noticed by SEM (SU 1510, Hitachi, Japan) at a magnification of 3000 and 500 with a voltage of 15KV to get images with appropriate quality. Besides, the porosity of the dry nanofibrous mat was determined by weighting the samples and calculating their volume from the thickness and area measurements. The porosity of the fibrous mat was estimated from Equation (1).

Where q is the apparent density of the electrospun mat and q_0 is the density of the bulk polymer.



Figure 3: Electrospinning machine, Model-TL-F6, Tong Li Tech, China.

Fourier transforms infrared spectroscopy (FTIR)

The chemical characteristics of recycled PET nano mat and nano mat mask were characterized using an

FTIR (IRPrestige21, Shimadzu Corporation, Japan). The spectra of all the different ratio samples were recorded in the 400–4000 cm⁻¹ range with 4 cm⁻¹ resolution. All result appears in a satisfactory level.

Results and discussion

In this project, we have produced a PET bottle-based nano-fibrous mat to apply in a facemask. In this section, the answer to some common questions has attached.

Internationally, the need for nanofibre continues to expand, which is why we have scaled up to increase supply to meet the demand not just for filter media but also for our full range of goods.

For use infiltration, NF fabrics developed by electrospinning have attracted interest. This is partly because the nanofibre diameter is 10-100 times smaller than that of regular MB microfibers. In nanofibres, the higher surface area induces better filtration efficiency, primarily because the primary driving force in air filtration is surface interaction.

Measurement of moisture management

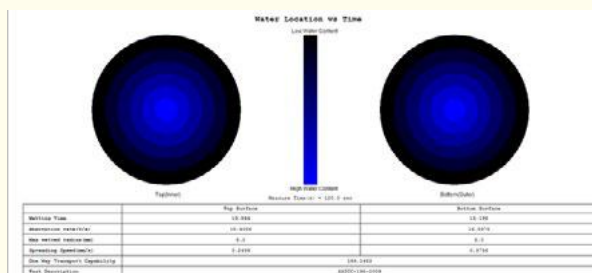


Figure 4: Moisture management test of the only nanofiber.

The MMT test of the only nanofiber shows wetting time 19.84 s and 13.19 top and bottom surface respectively. Other results are satisfactory level for using this nano mat in the facemask.



Figure 5: water content vs time graph of the only nanofiber.

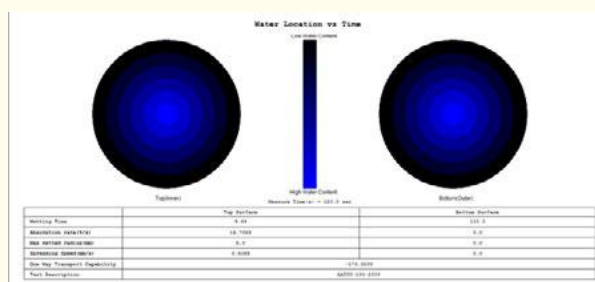


Figure 6: Moisture management test of nanofiber with a mask.



Figure 7: Water content vs time graph of nanofiber with a mask.

On the other hand, when attaching it with another mask layer then obtained 9.64 and 120 respectively for both surfaces. Since the mask layer is very thin thus water can't reach the bottom surface. Other results are satisfactory.

Morphological analysis-

The morphological structure of the recycled nano-matt shows tiny porous which has the prospect to prevent viruses and bacteria.

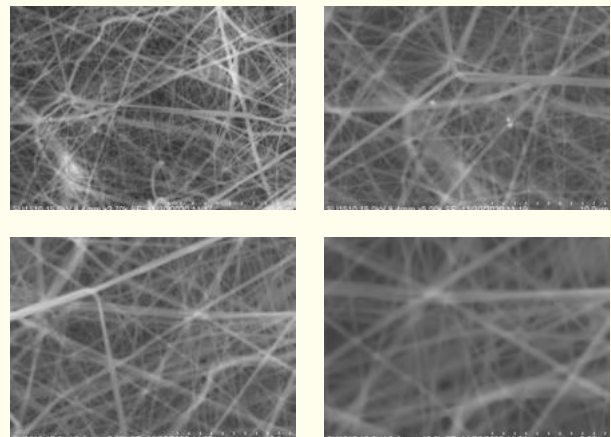


Figure 8: SEM View of nano-fibrous matt in 5, 10, and 20-nanometer magnification.

Why are there better electrospun masks?

Many harmful particulate pollutants have a diameter smaller than 1 micrometer. Conventional mechanical fibrous filters (such as melt-blown filters) eliminate high-quality micrometer-sized particles. Electrospun nano filter, however, is considered best for particles in the submicron range as they give the enhanced quality of filtration. This is due to their high area of the surface and the small diameter of the pore.

Breathability

Breathing comfort is generally correlated with a pressure drop. Another significant aspect to remember is the transportation of moisture, In a recent study, It has been observed that the ES NF filters' WVTR was superior.

In our test report, ES NF filters have a finer structure and morphology and a more uniform pore diameter. This makes it possible to more consistently and effectively transfer the water vapor through the filter.



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Reusability

Research has been conducted on the reusability of MB and when washed with ethanol (sprayed and dipped), electrospun nanofiber filters. The results showed ES NF filters can be successfully reused many times as the filtration efficiency remains constant (about 96.5 percent).

Is it commercially viable?

Historically, nanofibers could not be manufactured in large enough quantities and at low enough cost to be economically feasible against existing alternatives such as meltblown. Recent technical developments have ensured that the output rate of electrospun nanofibre is similar to that of the traditional melt blowing process.

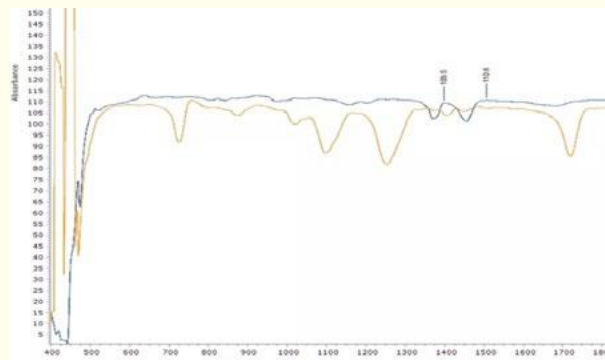


Figure 9: FTIR report of nano matt and mask

The chemical characteristics of recycled PET nano mat and nano mat mask were characterized using an FTIR (IRPrestige21, Shimadzu Corporation, Japan). The spectra of all the different ratio samples were recorded in the 400–4000 cm⁻¹ range with 4 cm⁻¹ resolution. All result appears at a satisfactory level.

To appreciate how ES NFs (Electrospun Nanofiber) boost filtration efficiency, understanding the process of particle capture is important. Five different mechanisms can obstruct particles through a filter: Sieving, Interception, Diffusion, Inertia Impaction, and Electrostatic Attraction (Figure-10).

Gravity can aid the process of filtration, but for particles smaller than 600 nm, it is mostly considered negligible. As seen in Figure 1, particles can be divided into various sizes.

Flow chart of Electrospinning

Cost analysis

Raw material cost is negligible and excluding machinery cost:

Lab-scale production cost- Approximately 10-12 Tk per mask

Bulk scale- Approximately 5-6 Tk per mask.

Conclusion

In this project, an electrospun nanofibrous mat has been successfully produced from recycled

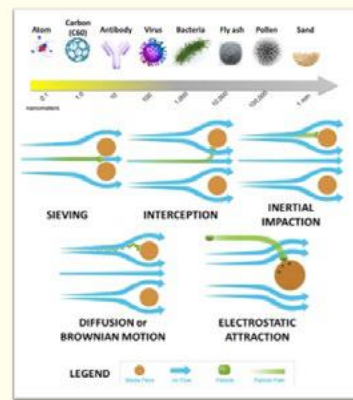


Figure 10: The definition of the scale of the particles present in nature (top), and the mask filter mechanism (bottom). Courtesy: Springer[22]

mat produced from natural and synthetic polymer have sought great attention. Infrared spectroscopy confirmed the presence of a functional PET functional group in the nano mat.

Most of the pollutant partials have at the micro-level and some are nano level. Where virus and bacteria can penetrate through the conventional non-woven mask but can't through nanofibrous face mask due to nano scale porus.

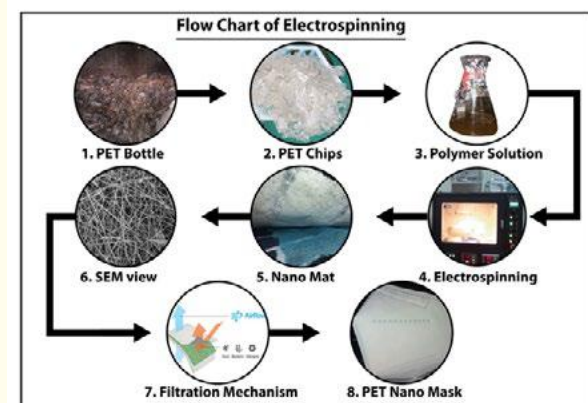


Figure 11-Flow chart of Electrospinning process.

Because of unique technology and understanding of customer satisfaction, high protection so this mask will have a prospect of monopoly business. Covering the national demand, Bangladesh can emerge as a medical textile supplier in the global market. This is where the project stands.

Acknowledgments

Department of Textile Engineering, DUET, Gazipur and Bangladesh Jute Research Institute (BJRI) are thankfully acknowledged.

Disclosure statement

There is no conflict of interest

Rahbar Hossain

After a long process and procedures, finally top 25 Transformation Leaders of Textile Talent Hunt 7th Season defended their project on 19th and 20th February at TEAM Group premises, the Title Sponsor of TTH 7th Season.

Abdullah Hil Rakib, Managing Director of TEAM Group inaugurated and welcomed all the TLs. In the project defense ceremony Tareq Amin, Founder

TTH 7th Season Outstripping projects from top 25



Figure 1: Top 25 Transformation Leaders of Textile Talent Hunt 7th Season defended their project on 19th and 20th February at TEAM Group premises.



Figure 2: Judges panel interviewed top 25 Transformation Leaders.

& CEO of Textile Today; Eousup Novee, GM, HR, Strategy & Process, Textile Today; Dilruba Sharmin Khan, Director, Group HR of TEAM Group; Amanur Rahman, Managing Director, Dysin International Ltd.; Iqbal Rizvi, Managing Director, Sameet Dye-Chem Ltd.; Habibur Rahman, Managing Director, Quantity Improvement Solutions; Sharmin Sultana, Responsible for Washing, Trimming and Garments Printing, Archroma and different factory GM and department heads of TEAM Group were present.

For the 7th Season Grand Finale, final projects have been selected based on the judge's evaluation. The selected TLs will present their project at the Grand Finale in front of the industry key persons.

Selected TLs are Md. Sadman Sakib, Bangladesh University of Textiles; Tanvir Hossain, Bangladesh University of Textiles; Mushfiq Ahmed, Textile Engineering College, Chattogram; Eakub Hossen Hridoy, Sheikh

Kamal Textile Engineering College and Md. Tanvir Hossain, Dhaka University of Engineering & Technology.

The 7th season of Textile Talent Hunt has launched on 24th November 2019 to prepare the future leaders who will lead the industry and create the blueprints. Textile Talent Hunt started its glorious journey back in 2008. The program has been an impactful change catalyst for the apparel

industry.

Textile Today is the organizer of this nationwide program by which integrating professionals, stakeholders, factories working in many segments like training, creating knowledge-sharing platforms, knowledge accumulation and dissemination and installing management systems. And Textile Talent Hunt is at the forefront that helping Textile Today to transform itself into an Innovation Hub.



Figure 3: The future leaders who will lead the industry and create the blueprints.

STB Black Belt achievement in “Garments Washing & Dyeing” and “Fabric Technology”

Sanjoy Kumar Saha

Prince Al Farabi a final year student of BGMEA University of Fashion and Technology has achieved a Black Belt through his 4 months' intensive journey of 128 hours of factory skill development training in 8 different courses. He also accomplished 128 hours of practical project work at ISLAM GARMENT LTD on sustainability in Garments Washing & Dyeing.

The Project Leader Engr. Md. Nasir Ullah, Country Manager Officina +39, Ex. Head of Washing Denimach Washing Ltd. handed over the certificate to Al Farabi at the Textile Today premises.

Md. Nasir Ullah said, “The outcome of the project was good and very effective to gain sustainability in Garment Washing and Dyeing sector in Bangladesh. Industries can easily apply the new updated process and sustainable products for mass production and can add more profits and value.”

Tazul Islam, General Manager (Wash), Islam Garments Ltd was the Industry Supervisor of this project.

Habib Manzur Hasan (Bappu) Director of KRB International has achieved a Black Belt in Fabric Technology by doing a practical project work at Southwest Composite Ltd on Sustainable Crease-free Dyeing of Cotton Weft Knit Fabric.

Project leader Md. Rahat Ullah Rashed, Head of Technical Support, Taiwan Persotex Corporation commented, “The outcome of the project is very effective and efficient to deal with the crease mark problem in the dyeing of cotton weft knit fabric. The trial shows significant improvement to overcome this problem. Hope the result of this project will help other Dye houses of Bangladesh to minimize their problem regarding crease mark.”

The Project, Prince Al Farabi worked in his 4 months' journey was focused on turning the existing processes and products into sustainable ones in Garments Washing and Dyeing. Saving of water, energy and chemical was getting challenging in garment washing and dyeing. In this project, he managed to apply sustainable products and processes in garment dyeing and washing. The outcome of the project shows the way to maximize production, reduce water, chemical and time and also add profit for the industry. This project has also the concern of Environment issues. The application of this project outcome will help the industries to



Figure: Project Leader Engr. Md. Nasir Ullah (Middle), Country Manager Officina +39, handed over the certificate to Al Farabi at the Textile Today premises.

add profit with ensuring sustainability.

Background or rationale:

In conventional garment dyeing and washing method, the uses of water, chemicals and utilities are comparatively high than the newly introduced method of garments dyeing and washing.

Here, we can able to minimize the processes of garments dyeing. Nebulization dyeing technique is another evolutionary concept for garments dyeing. It is getting much popular for its ability of dyeing operation with a 1:1 liquor ratio.

Recycrom dyeing is very effective to fulfil the required outlook of selective garments with lesser utility uses. These new methods and alternative chemical using are becoming a must choice to gain sustainability in garments washing and dyeing. It can be able to reduce the use of water, chemicals, and utilities and reduce the pressure of ETP that pollutes the Environment.

The Project, Habib Manzur Hasan Bappu worked in his 4 months' journey was based on one of the most challenging problems found out in recent years where cotton weft knit fabric tends to form a crease mark. The fabric department faced this problem very often and found limitations in the end products and dealt with extra cost issues. The objective of this project was to find out the causes of Crease Mark, to analyze the relation between Fabric tightness, Crease mark and to see the shrinkage rate for increasing stitch length.

So, this project is necessary for ensuring the crease free dyeing to reduce extra processing time and fabric rejection.



ITM Exhibition Postponed to 14-18 June 2022

Desk Report

ITM International Textile Machinery Exhibition, which is planned to be held on June 22-26, 2021 postponed to June 14-18, 2022, considering the effects of the ongoing Covid-19 pandemic in the world. This postponement decision was taken as a result of intense discussions and evaluations with participants and sector representatives.

The ITM Organization Team made the following statements: "Our priority is to protect valuable exhibitors and visitors' investments and all rights, not our commercial earnings. In this regard, we believe that all of our participants will find this compulsory postponement decision taken for

the ITM Exhibition justified and will understand."

ITM 2022, which will be held with partnership of Tüyap Tüm Fuarçılık INC. and Teknik Fuarçılık INC. in cooperation with TEMSAD, will organize at Istanbul Tüyap Fair and Congress Center on June 14-18, 2022.

ITM 2022 Prepares to Break New Records

The latest ITM Exhibition hosted the world textile industry with 1200 exhibitors from 64 countries and 60,000 visitors from 94 countries. ITM 2022 Exhibition is preparing to break new records as one of the most important global organizations to be held after the

pandemic period.

Hundreds of companies participating in the ITM 2022 will have the opportunity to introduce their latest technological innovations and products to tens of thousands of visitors in Istanbul for 5 days.

ITM 2022, where world textile machinery manufacturers and investors will meet; it will direct the textile machinery sector in terms of launches and new ideas to be organized by companies.

Organization team hopes to see exhibitors and visitors at ITM 2022, where the newest technologies to be exhibited by meeting with Great Ideas.

RH Corporation launches cost-effective Copperhead Pro Mini from M&R and introduces sustainable screen-printing solutions from CHT

Rahbar Hossain

Aziz Group, a reputed and well-known company established in 1965 by the visionary leader Azizul Haque Chowdhury, the Chairman of the group. Over time, it has grown itself as one of the leading and promising companies by adding its concerns RH Corporation, SAS Enterprise Ltd., ASM Chemical Industries Ltd., etc. Now the company is led by its visionary second-generation leader Rajibul Huq Chowdhury, Managing Director of Aziz Group.

Recently, RH Corporation arranged a seminar on 24 February 2021 to launch the world's first electric label screen printing machine in Bangladesh also introduced Ecoprint by CHT at the Aziz Group Convention Hall, Tejgaon I/A, Dhaka.

From 25+ factories, mainly from the leading printing industries, like AKH Knitting and Dyeing Ind. Ltd., Knit Concern Printing Unit Ltd., Thanbee Printworld Ltd., Square Fashion Ltd., Aukotex Ltd., Islam Garments, Gothic Design Ltd., Comfit Composite Ltd., Chaity Composite Ltd., Echo Tex Ltd., Graphics Textiles Ltd., Hams Fashion Ltd., Lantabur Apparels Ltd., Impress-Newtex Composite Textile Ltd. decision making personnel have joined the seminar. The industry people appreciated the latest development from the M&R.

Key points of Copperhead Pro Mini-

- It has compact system and needs only 8 X 8 sq. ft. space to set
- Minimum 800 pcs per hour production
- Only 2 operators are needed to run this machine, which saves

huge labor cost

- Return of Investment period is (ROI) 5-6 months
- Easily movable as per necessity
- Operating cost saving
- Energy saving
- Available up to 4 colors, 10 stations
- Special feature – PFP mode
- Less maintenance needed

Borhan Uddin and Faruq Hossain gave the presentation on Copperhead Pro Mini business and technical aspects. Cyrus Sethna, Sales Director – The M&R Companies, USA joined the Q&A session via zoom.

RH Corporation has been representing M&R, as a sole distributor, since 2002 in the Bangladesh textile and garment industry.

RH Corporation also introduces sustainable screen-printing solutions from CHT which offers a vast, permanently growing, biodegradable product-range for textile finishing that meets

the strict toxicological guidelines and in turn helps in achieving the Cradle to Cradle (C2C) Certified™ platinum product standard for the finished textiles.

Cradle to Cradle philosophy calls for redesigning and reshaping product design and manufacturing system to a closed-loop system in which every material travels through a continuous cycle of use and reuse and finally provides the "Circular Economy".

CHT offering products under C2C platinum certification as below-

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4. BEZAPRINT Fuchsia CC-I
5. BEZAPRINT Red CC-G
6. BEZAPRINT Carmine CC-E
7. BEZAPRINT Black CC-N
8. BEZAPRINT Green CC-M
9. BEZAPRINT Golden Yellow CC-C



Figure 1: Copperhead Pro Mini from M&R will bring a revolutionary change in the industry.



Figure 2: Rajibul Huq Chowdhury, Managing Director of Aziz Group (from right to left 8th) with the team and guests.

Auxiliaries

1. PRINTPERFEKT BASE CC 20
2. PRINTPERFEKT CLEAR CC 50
3. PRINTPERFEKT WHITE CC 10
4. TUBIFAST CC
5. TUBIGAT R 130 NEU
6. TUBIPRINT WHITE CC 100
7. TUBISOFT CC PEN
8. TUBIVIS CC

The principle of Cradle to Cradle® is a pioneering step in the textile

world that fits perfectly to CHT's sustainable strategy.

Hasan Bashir, Executive Director (Marketing, Sales & Technical) of RH Corporation shared how CHT working worldwide. In 2020, RH Corporation from Bangladesh contributed 6% (£30 Million) of global sales of CHT. Faruk Ahmed, Head of Sales (Printing Division) and Md. Shafiqul Islam, Head of Sales & Technical (Printing Division) shared about the CHT C2C platinum-certified pigments

and auxiliaries.

Benoit Moutault, the Group Vice President - Business Field Textile, the CHT Group and the Managing Director, CHT Switzerland AG gave an online speech to the audience on what CHT doing and how contributing to the people and the planet.

Through RH Corporation, CHT has started its business in 1997 for auxiliaries and later also introduced the dyestuffs in Bangladesh.

Rajibul Huq Chowdhury, Managing Director of Aziz Group thanked all the participants in the seminar.

A.S.M. Hafizur Rahman (Nixon), Executive Director - Business Development, Operations & PR, and Miraz Feda, General Manager, - Operations, Human Resources & MIS of RH Corporation have hosted the whole day seminar.

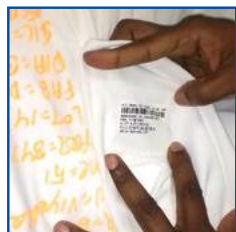


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Pure Chemicals joins hands with Textile Today for steering innovation in the textile and apparel industry

SN Abdullah

Pure Chemicals teams up with Textile Today for steering innovation in the textile and apparel industry at its premises on 23rd February 2021.

Textile Today, the leading global textile media platform in Bangladesh appreciates Pure Chemicals for its contributions towards Textile Today Innovation Hub.

Pure Chemicals as an innovation-driven company has been exemplary for the textile and apparel industry. To provide a significant global standard of quality services that exceed the prospect of our privileged patrons.

Pure Chemicals was established in October 2018. Since its inception, an innovative trading company in Bangladesh is related to the denim washing and textile auxiliary market. In essence 'Pure Chemicals' is an outliner of 'SOKO Chimica-Italy' in Bangladesh.

By paying constant attention to the market and customers trends, demands and cultural views integrated reliable chain focused by:

- Sustainable
- Know-how
- Excellency

Our mission is to achieve consistent perfection, providing a quality product with consistent



Figure: Md. Forhad Hossan, CEO, Pure Chemicals and Tareq Amin, Founder & CEO, Textile Today signed an agreement on behalf of the respective companies.

Unique Products of Pure Chemicals

Product Name	Description
DISPERSOKO ABS-GSX	Anti-Back-Staining Agent And Detergent For Denim
BIOCLEAN SOKO	Enzymatic Abrasion Booster & Denim Cleaner
PRECAND SOKO	Cleaning + Bleaching Agent
SOKO BLACK MAGIC	SULPHUR BLEACH WITH LOW TEMPERATURE-SINGLE BATH-FAST PROCESS
SOKOSTONE NL-C	High-Performance Enzymatic Cellulase For Bio-Polishing & Stonewash
SOKOSTONE NS	Stone Free Enzyme
PEROXISOKO ECO	Product For Neutralization Of Potassium Permanganate And Sodium Hypochlorite
TENDERSOKO SI MICRO ID	Hydrophilic Silicon Softener
RESOKO SHADOW	Vintage Dyeing
EASY WAVE	Pigment Replacement

price, strong technical support and maintaining international standards.

By joining hand with Soko Chimica-Italy R&D lab, we committed to using only certified and safe premium quality raw materials coming from reliable chain only. The domino effect has continuously pursued new challenges to supply eco-friendly products that are OEKO-TEX, GOTs, REACH and ECO PASSPORT certified.

Md. Forhad Hossan, CEO, Pure Chemicals said, "Pure Chemicals is committed to providing the

best quality product with the best price along with strong technical support and top-notch system with highest ethical and professional standards by maintaining international regulation with a mission to be a leader in the textile and washing industry in Bangladesh."

By partnering with Pure Chemicals, 'Textile Today Innovation Hub' will expand to a larger scale. Textile Today Innovation Hub working on various industrial projects in a systematic approach to finding out the solutions. The solutions that can help the textile and garment industries to become more

sustainable.

Joining Textile Today Innovation Hub, Pure Chemicals believes that the industry will experience a new change in the manufacturing process, chemicals, ETP, and other processes.

Being a part of this 'Innovation Hub' Textile Today Associates will not only support the platform to function effectively but also the Associates will be able to utilize the knowledge, communication and networking leverage of the platform to position them in the markets as an innovation-driven business.

Youngone invested \$65 mn in man-made fibre in KEPZ and planning to invest \$120 mn

Riasad Zaman

Witnessing the increase in global demand, South Korea-based global conglomerate Youngone Corporation has hugely invested in man-made fiber (MMF) for clothing in its factories in the Korean Export Processing Zone (KEPZ) in Chattogram. Until now, US\$65 million has been invested in the 3 factories while another \$120 million will be invested to operate five in total.

Youngone is the largest foreign investor in Bangladesh's garment industry. Youngone has a plan to invest \$1 billion over the next few years depending on the country's situation. Employing more than 60,000 employees altogether in Bangladesh.

Well-known for its outerwear and MMF products, Youngone recently started manufacturing polyester fabrics at three factories covering 40,000 square meters each at the KEPZ.

Kihak Sung, Chairman and CEO, Youngone Corporation said that



Figure: Youngone Corporation has hugely invested in man-made fiber (MMF) for clothing in its factories in the KEPZ in Chattogram. Courtesy: Collected

Japanese engineers will install some new machinery at one of the KEPZ factories soon.

Sung added that currently, 95% of all the fibers produced by Youngone is MMF that is used by its factories and other local manufacturers for a variety of garment items.

Youngone is the key supplier of down jackets in Korea and it is also the foremost supplier of The North Face products globally.

The retention value of quality down jackets in Bangladesh is more than 75% and Youngone is the main manufacturer of this superior kind of jacket for cold weather. The product is mainly manufactured in the KEPZ factories.

Besides, to ensure green energy Youngone is also investing in a solar power development project to produce 40 MW capacity to the KEPZ.



Young RMG leaders' organization BAYLA commenced

Rahbar Hossain

Bangladesh Apparel Youth Leaders Association (BAYLA), an organization of the young generation apparel leaders, commenced its official journey, on Saturday to mitigate vital challenges in the ready-made garments (RMG) industry.

On the event, BAYLA made a 16-member board to run the organization, where Abrar Hossain Sayem from Sayem Group and Al-Shahriar Ahmed, MD of Adzi Trims Ltd, was nominated as BAYLA's President and Secretary, correspondingly.

Abrar Hossain Sayem expressed, "The sole proposal of this body is to research innovation, bring a young generation of RMG leaders together and find new opportunities for training, capacity building, and market expansion."

"The team is expected to

contribute significantly to the apparel industry of Bangladesh. The association will work closely with leading associations of the industry like BGMEA, BKMEA, BTMA, and BGAPMEA," Sayem told.

Al-Shahriar Ahmed, Secretary, BAYLA said, "We informally started this journey 2 years ago and after registering earlier this month, we are now an official body to lead the next generation RMG sector in the country," adding that "In these challenging and tough times, we need youth leaders to come to a common consent to get Bangladesh RMG industry an advantage in the fourth industrial revolution, where we must require more proactive approaches within the industry."

This is exclusively a non-political association born out of the motivation and willpower of youth, where more

than 100 members are already joined and the pipeline is getting bigger day by day, said sources.

Centering on innovation and branding, member connection and growth as well as capacity building and market growth, BAYLA has committed to consolidating the forward and backward linkage industries of the RMG.

The organization will also work for branding the textile and apparel by sponsoring its innovation and sustainability.

The young apparel leaders of BAYLA believe that the vital changes can be planned, framed and implemented through a blend of experience and enthusiasm.

They also pressed the senior industry leaders to guide BAYLA with their experience with a hope to work together in the future industry landscape.

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add value to your fabrics

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E-mail: coordination@matexbd.com; web: www.matexbd.com

Utilize the biggest

Media Communication & Innovation Hub

for Textile & Apparel Industry.

1

More Than
630,000+ Monthly
Website Page View

2

Paper, PDF &
E-Magazine Reaches To
About 150,000+ People
Per Month.

3

Weekly E-Bulletin
Reaches To About
100,000+ People Per
Month

4

More Than 150,000+
Social Media
Engagement

5

Webinar Series For
Technology/Solutions
Launching

6

Problem Solving
Through STB
Innovation Hub

7

Technology Piloting
Through STB
Innovation Hub

8

Biggest Ever Academy -
Industry Collaboration

9

PEOPLE Project For
Increasing Profitability
& Organization Build
Up.

“A man who stops
advertising to save
Money is like a man
who stops a Clock to
save time.

- Henry Ford

 **TextileToday**
Driving business with knowledge

 **TextileToday**
Weekly e-Bulletin

Setting
Transformation Blueprint
for Textile & Apparel Industry

PEOPLE
Profitable & Effective Organization through People Leadership & Excellence

 **TextileToday**
Innovation Hub!



Textile Auxiliaries

- | | |
|--------------------------------|------------|
| • Detergent and Wetting Agent | Samwet BLN |
| • Detergent and Wetting Agent | Samwet BLF |
| • Sequestering Agent | Samseq USA |
| • Sequestering Agent | Samseq ASA |
| • Anticreasing Agent | Samcre PAM |
| • Peroxide Stabilizer | Samper STB |
| • Peroxide Killer | Samper KLR |
| • Levelling Agent | Samlev FSA |
| • Fixing Agent | Samfix FFF |
| • Soaping Agent | Samsop APF |
| • Cationic Softener | Samsop CAT |
| • Nonionic Softener | Samsop HWS |
| • Hydrophilic Silicon Softener | Samsop HSS |
| • Hydrophobic Silicon Softener | Samsop PSS |
| • Green Acid | Samneu CAN |

Basic Chemicals

- Hydrogen Peroxide (H_2O_2)
- Caustic Soda (NaOH)
- Hydrochloric Acid (HCl)
- Chlorinated Paraffin Wax (CPW)
- Calcium Carbonate
- Liquid Chlorine (Cl_2)
- Filler Compound

Construction Chemical

- GLINDING AIDS & PERFORMANCE ENHANCER SAMCEM GSI

Disinfectant

- PROtect (Hand Sanitizer)
- PROtect (Household Cleaning)

Boiler Chemical

- SAMBLR SCI
- SAMCLR SCI
- SAMBLR CWP

Others

- Formaldehyde Scavenger

Samuda
Chemical Complex Limited

Samuda
Spec-Chem Limited

Color is demand



WORKING TOGETHER TOWARD OPERATIONAL EXCELLENCE AND CONNECT WITH FULL COLORS!

We believe in challenging, but fair relationships, open honest and built on trust, would build strong business network which can be competitively advanced to other's business network. The competition happens not between company and company but between network and network. To get sustainable competitiveness in business, it is crucial to be involved in right and strong network. Let's work together with OHYOUNG and let us help you achieve your business success with our product and service.

Reliability is our response !



OHYOUNG



TeXco tech
We add value To Our Partners

We Bring Ohyoung to You

Email: mail@texcotech.com, Web: www.texcotech.com