**No more toxic clothing products.**

**Textile companies try hard to transform ‬the traditional dyeing to become‬ an industry of ‬zero ‬pollution**

在全球的時尚版圖中，台灣早已是全球最重要、也是最頂尖的布料供應商，許多國際大牌都使用台灣研發的布料，最主要的原因，就是因為台灣布料的品質有目共睹，而且在價錢方面又具有競爭力。台灣也有許多標榜MIT的平價自有品牌，甚至能創下一年約兩千萬美金的營業額。從國際時尚伸展台到一般平價成衣，這些色彩繽紛的衣物在實際穿到消費者身上之前，都必須經過一個工序──染整。

In the global fashion industry, Taiwan has long been one of the world's most important and top fabric suppliers. Many top brands have been using the fabrics from Taiwan because of the quality and competitive fair prices. In recent years, domestic clothing brands have also proudly marketed made-in-Taiwan fabrics. Some can even generate a turnover of over 20 million USD per year. From global fashion brands to general parity garments, before all these colorful clothing products are sold to consumers, most of them need to go through the dyeing process.

然而紡織產業中最為耗費成本、消耗資源的非染整廠莫屬，染整廠所排放的廢氣與廢水會對空氣、河川造成破壞，一座染整廠一天排放的廢水就可能讓數公里長的溪流變色，其中的酸性物質會影響生態環境，並且摧毀沿岸的農作物，而透過煙囪排放的廢氣甚至會讓鄰近地區籠罩在灰黑色的有毒粉塵中。而且一件經染整過的成衣上所測到的化學殘留物可能高達八千多種，不僅對人體造成肌膚上的傷害，也常會影響呼吸系統的健康。

Beauty usually comes with a price, and pain. The most costly and wasteful part of the textile industry has to be the dye manufacturing, especially the discharged wastewater and hazardous emissions. Without proper treatments, the waste can damage the aquatic environment, destroy crops along the bank, pollute nearby neighborhood, and much more. It is estimated more than 8000 toxic chemical residues can be detected in a final clothing product. It is proved to cause allergies, skin rashes, or respiratory problems.

台灣紡織業已開始意識到環境保護與肌膚保健的重要性，例如這家曾經以自製布料躍上巴黎時尚伸展台的台灣企業，他們認為要扭轉染整的「汙名」，就必須從有機紡織做起。因為棉花是地球上被噴灑農藥最多的作物之一，棉花的加工過程更依賴許多漂白劑、染料、整染安定劑等化學藥劑，因而排放大量廢水。這家台灣企業從產品源頭開始把關，使用對生態友善的有機棉以及植物性染劑，而且這家企業的廠房完全沒有鍋爐，他們引用鄰近化工廠的再生能源產生熱能，將染整的溫度全程控制在60℃，不僅可以省下50%的能源，也可以讓布料纖維吸進95%的植物染料，減少廢水排放。

Being a crucial supplier, Taiwan's textile industry has begun to realize the importance of environmental protection. This Taiwanese company that has been a regular fabric supplier for Paris fashion runway shows believes the key to reverse the negative reputation of textile industry is to go organic.

Conventionally grown cotton uses almost one quarter of all the world’s insecticides and 10% of pesticides. In addition, traditional textile manufacture uses tens of thousands of acutely toxic chemicals including heavy metals, formaldehyde and aromatic solvent, all hazardous to the environment.

To make a difference, this particular Taiwanese company started using organic cotton and vegetable dyes. And surprisingly, there is no boiler in the factory. Instead they take advantage of neighboring plants’ excess heat and convert it into steam that helps dye fixed into fabrics. After years of trial and error, they are able to control the entire dyeing process under 60℃.It not only saves about 50% of energy, but also allows fabrics to absorb 95% of the vegetable dyes and reduces discharged wastewater significantly.

在各界紛紛努力投入保護地球生態的浪潮下，紡織業也可藉由發展無害、健康、具機能性的產品來貢獻一己之力。利用植物性染料低溫染整出的布料，不僅環保，更能提供現代人對生活品質的要求，這家企業的布品已讓知名內衣廠牌成為忠實客戶，其他客戶還遍及南亞、歐洲等國。

As more and more people involved ‬in environmental protection, ‬the textile industry can also contribute by developing harmless, healthy, and functional clothing products. According to this Taiwanese company, using vegetable dyes and applying environmentally approaches benefits themselves the most. “Quality products leads to customer satisfaction, which leads to customer loyalty, which leads to profitability,” they said. Now they have attracted well known lingerie brand, and new customers throughout Asia, Europe..ect.

另外一家台灣傳統的老牌公司則是利用「廢氣」，成功的把原本是製造污染的紡織業，轉型為節省資源、低排放且低汙染的環保企業。

他們利用大氣壓力可以將二氧化碳液態化的原理導入了染色步驟之中，將工廠排放出來的二氧化碳引入特製的鍋爐裡，再利用大氣壓力讓氣體轉化成液體，然後進行染色，如此一來，節省了龐大的用水成本，也順勢解決了廢水汙染的問題。

 除了利用科學原理，這家廠商乾脆跳過漂染的過程，直接將顏色染在聚酯纖維上面，他們稱之為「色母粒」，然後再將其抽絲，讓棉絲一開始就能擁有終端產品所需的顏色。

Another ‬traditional Taiwanese ‬textile ‬company ‬has also successfully overturn what ‬has long been ‬criticized ‬as the ‬wasteful ‬industry, ‬into a ‬eco-friendly ‬enterprise.‬ ‬By using ‬the concept of turning ‬carbon dioxide ‬into liquid form ‬and apply it on the ‬dyeing ‬process, ‬they ‬have ‬saved a large amount of water usage and also resolve the problem of water and air pollution. With the advancement of science, ‬this company is able to ‬skip ‬the ‬traditional ‬bleaching and dyeing process, ‬directly applying ‬the coloring on ‬polyester fiber, ‬using what they ‬called "‬Color MasterBatch". It basically colors the raw material so fabric dyeing becomes unnecessary.

利用特殊的染料以及原料，讓絲在抽出的過程就已經完美的帶有終端產品所需要的顏色，在製造產品之前就要精準的抓好顏色，這種方法不儘可以省下染整段所有的水源，也因為鍋爐需要的加溫能量大量減少，可以不用木屑爐、煤炭爐等等高溫產品，光使用電力去升溫就可以達到染色溫度，大量生產的時候甚至比傳統方式還要更加的便宜。 因為省能源就是省成本，附加價值預估高達百億以上。

With the new method, the company can produce an array of colored polymer fibers. It eliminates the water and hazardous substances needed during the traditional dyeing process. In addition, it is more energy-saving. Burners used to guzzle a large amount of coals and woods become unnecessary. When it comes to mass production, this new eco-friendly way is even more economical. Plus, the ‬added value, both tangible and intangible, ‬can be up to billions of dollars, according to the company. ‬

這家傳統紡織廠是目前台灣垂直整合程度最高的紡織成衣業者，全球布局跨越亞、美、非洲；近年更致力於產業轉型，研發原液染色環保彩纖，改變傳統的染色過程，從源頭上解決紡織行業染色的污染，落實生產過程污染物零排放的目標。而他們也研發出智慧成衣，例如可隨分貝大小而變化顏色的T恤，或是可以吸收太陽能的成衣，甚至結合了APP，創造出高科技成衣。

This traditional textile company has successfully turned itself to become a vertically integrated business. It has expanded the market ‬to Asia,‬ ‬America and Africa. With its growing influence, in ‬recent years,‬ ‬this company has also been trying ‬to transform ‬the traditional dyeing to become‬ an industry of ‬zero ‬pollution. Also, they have ‬developed ‬smart and functional garments, ‬for example, ‬sound ‬active ‬color changing t-shirt, solar power t-shirt, ‬and ‬high ‬-‬tech garments in sync with smart phone applications.‬

「產品無毒、製程無害」的環境保護承諾，已成為跨國服飾品牌在進行採購時的重要標準，台灣的染整業者與布料貿易商，是首先受到此波綠色浪潮衝擊的產業，他們跟上了環保的浪頭，發現問題，也開始解決問題，讓台灣紡織業在創造外銷金額127.17億美元的驚人實力下，也創造出難以估算的環保價值。

"‬Non-toxic ‬products, ‬harmless production," ‬the commitment to environmental protection has become a ‬standard for many ‬global clothing ‬brands ‬when choosing a supplier. Being a major supplier, ‬Taiwan's ‬textile ‬industry soon ‬recognized ‬the trend and then came up with ‬solutions. ‬Taiwan's textile ‬industry's ‬export ‬value is more than ‬12.717 ‬billion ‬USD. And the environmental value created? Priceless!