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ATTRACT

Future Technologies for Sustainable Fashion

CRESCENDO

Crescendo: a gradual increase, a crescendo of excitement. specifically: a gradual increase in volume of a musical passage.

Crescendo is a speculative design research project that intends to ideate upon the future of the dyeing processes in the fashion industry. We are a group of fashion designers and textile artists from Mexico and India that have individually worked with natural dyes in the past as a way to respond to the industry's present need for sustainability. When paired for this project we decided to keep building on it, envisioning a new methodology for giving color to fabric and raw materials. Our goal was to find a way to eliminate the dyeing process all together, skipping a crucial step in the garment production process and thus eliminate its harmful impact on the environment.

Today as much as 200 tons of water are used to dye 1 ton of fabric. The fashion industry is responsible for 20% of the world's water pollution. We can see the full effect of the dyeing processes in several news of waterways in China being "painted" with the color of the season. When companies dump their dyes they introduce harmful chemicals into rivers, lakes and oceans. Dyes accumulate in the waters to such an extent that light can no longer penetrate from the surface, which impairs the ability of plants to photosynthesize, lowering the oxygen content in the water, which leads to the death of aquatic life and plants.

With the guidance and insights from several experts in both the textile and scientific fields we were able to take our idea further and come up with a project that led us to imagine a world in which most of the steps of the production process are skipped where people would be able to grow their own clothes at home; in a future where fashion is a science to be redesigned.

Set in the year 2122, pandemics and global catastrophes have transformed the earth completely. Humans abused natural resources to the point that governments around the

world decided to declare the few green areas left as enclosed and protected natural reserves. All activities that previously harmed nature have been strictly forbidden.

The world looks like a laboratory. All in white and gray since people can no longer give artificial color to the world. Humanity is growing more depressed, stressed and anxious. The only way they can have access to vibrant shades of color is through the digital world and because of the restricted energy consumption schedules it is no longer enough.

It has been proven that color is the first thing our senses perceive. Color can affect our mood and impact our energy levels. People crave color to express themselves and develop further emotions. The world is desperate for uniqueness and creativity.

Crescendo wants to bring color back to the world. It is conformed by a group of fashion scientists that are working on revolutionizing the clothing industry. Since the ban of harmful fashion practices clothing has been made using biomaterials and lab grown raw natural fibers. The industry got severely restricted after the earth's water reserves got extremely polluted with the dyeing processes used in the past causing artificial dyes to be forbidden.

After this, the industry turned onto the use of natural dyes and bacterial dyes. When natural resources got enclosed, the access to natural dyes was no longer viable and bacterial dyes were banned as well because of ethical concerns on living beings welfare.

Crescendo proposes a new method for coloring fabrics and clothing that is sustainable and can be made accesible for all. By isolating the color molecule and then injecting it into a cotton seed we would be able to grow pre-dyed cotton fibers. We chose to work with cotton since it is a resistant, versatile and durable natural fibre that can be easily recycled or repurposed.

We realized that, while our first goal was to skip one step in the fashion process, we could take our concept further and actually skip several steps by designing a seed that can grow from sprout to finished garment in a short period of time. Eliminating the need for spinning, weaving, dyeing or sewing.

We are using the concept of genetic modification that is applied today in the food industry to recover color in fashion in a lab controlled environment. By genetically modifying the color molecule in the cotton seed while preparing the seed with enhancers we intend to create a new species of cotton that can grow 10 times larger than the cotton used in the past with very few

resources. Using guided growth performance technologies we would be able to use glass molds to guide the plant into a shape to create colored cotton garments.

Our main goal is to recover color and make it available for everyone. After being able to provide colored cotton and produce cotton garments with our crescendo seeds in the lab we would intend to rely on Darwin's Theory of Natural Selection and trust that with time our seeds will evolve and become a sub-branch of cotton specifically designed to serve the fashion industries' needs. We want people to be able to grow their own clothes at home, express their personalities and become co-creators with nature.

In order to communicate and visualize our project we developed a prototype using raw cotton fibers, natural dyes (hibiscus and mate herb) and an alginate biomaterial to design a new kind of cotton/alginate fabric that can be moulded directly into the body. Through the use of a gradient of different colors we were able to visually portray the growth process of our Crescendo Seeds.

Being part of a project that enabled us to think outside the box and take our fields into unsuspected possibilities opened our minds towards the future of fashion. We are aware that the textile industry has had a substantial negative impact on the state of the planet today which makes us conscious as designers about the way in which our choices matter.

Detaching our minds from all of the limitations we were able to see fashion from a different perspective. Fashion and Science have always been positioned as opposites but we want to propose a future in which the borders between these two disciplines are erased. A true change relies on us designers becoming fashion scientists to come up with solutions to transform the way clothes have been made up until now, envisioning new methodologies for design and production with sustainability and regeneration at their core.

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