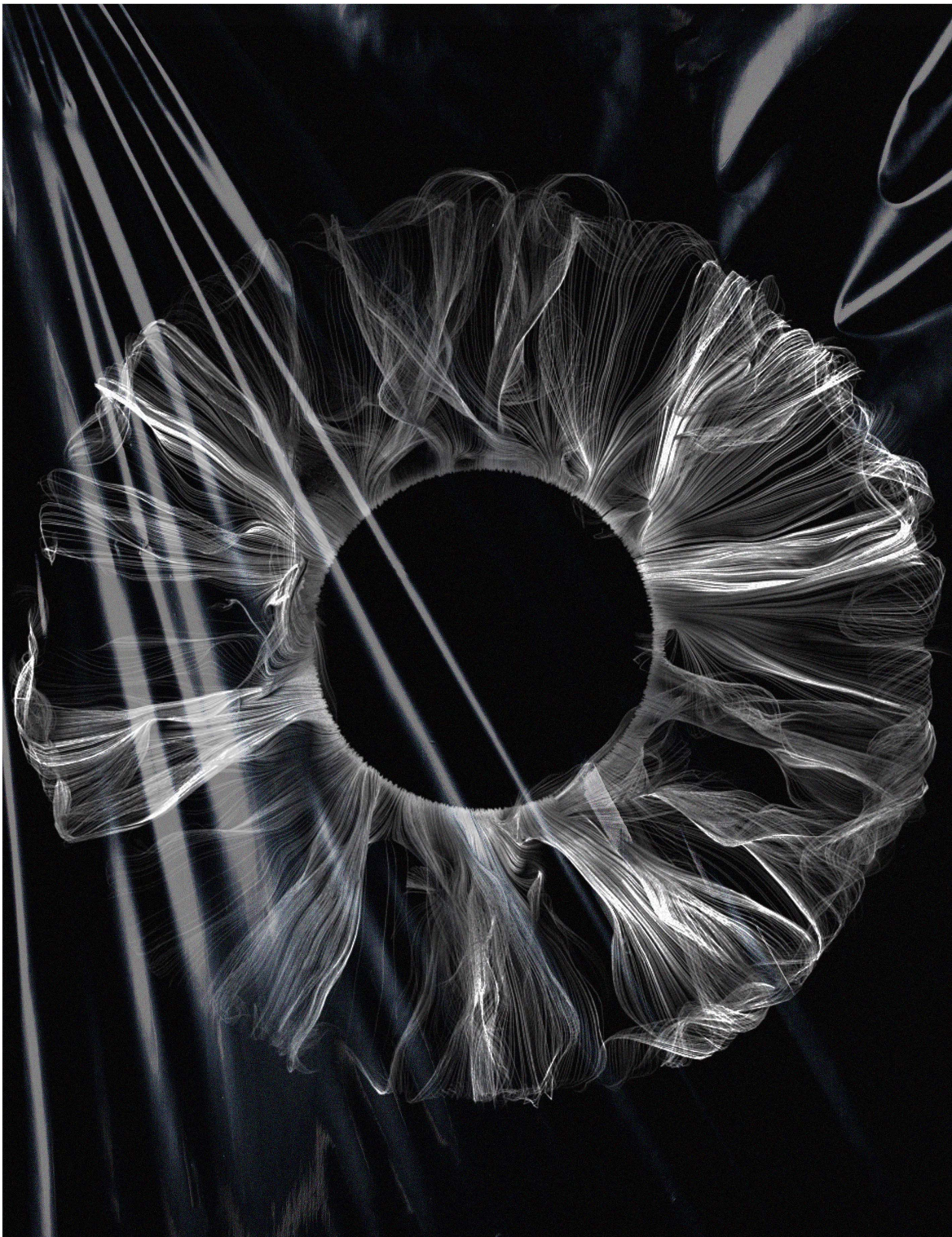


01 'BIOTECH'

FUSION AS A VISION

SUSTAINABLE REPRESENTATION



Having a sustainable vision means continually adapting to the emerging changes and core ideologies that define the sustainable values in the system. Through this project, the research is diversified by considering various subjects in matters of sustainability from biotech fusion science to algorithms of mathematics. Through the research how can one address the wicked social and economical factors through the eyes of sustainability. The concerns regarding sustainability are now addressed on a global impact. This research is a suggestive major approach towards the higher applications of incorporating sustainability in a general design process. The pursuit of sustainable development has always been a global attention target various industries. *The transition towards a more sustainable society is often described as a matter of 'learning by doing' and 'doing by learning' (Van Poeck, 2020).* This research is a sustainable analysis tool that aims to cater to environmental problems targeted in the fashion industry. Those questions are

What are the different possible ways to control waste generated by industries and the appropriate measures taken?

Either focus on existing materials and technologies or introduce a new analysis concept for promoting an ethical process?

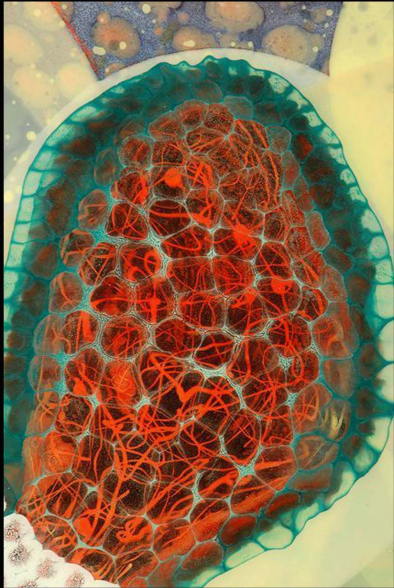
Engaging technologies and algorithms creating virtual aspect in the designs. Furthermore incorporating a design process from virtual to real representation?

A selected target audience to be revealed to the analysis model that makes the design process ethical, affordable and time effective?

Furthermore scaling and managing operations impact. And how can this be integrated into an existing design module?

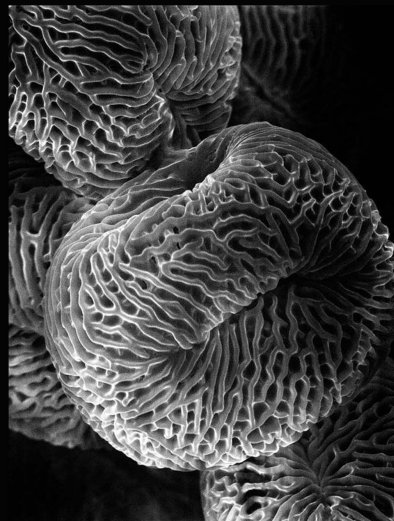
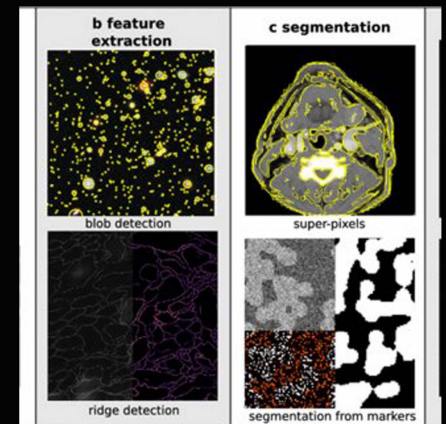
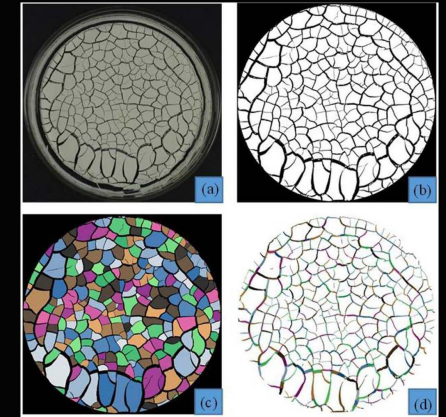
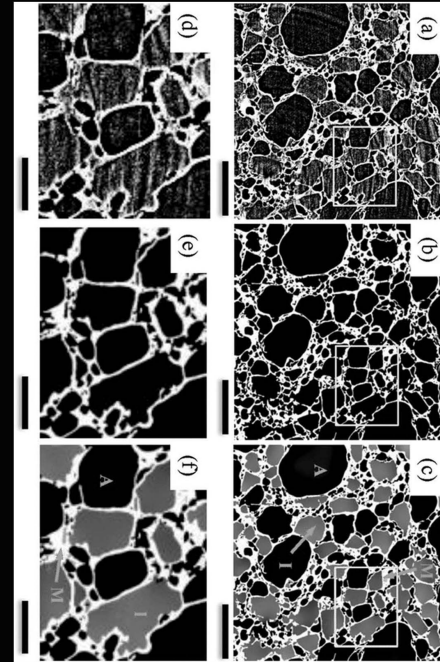
This research covers aspects such as material engagement and selection, target audience, product performance, production and manufacturing, virtual to real design ethical technicalities, design process subjected to science visual and algorithm performance.

Science and sustainability linked with fashion has always been a field of exploration for me. Especially when I'm researching along the lines of fashion beyond clothing, my further experiments focus on reflecting the beauty of nature through innovative textiles and silhouettes.



STRUCTURE

Using the different techniques of image processing, that is image analysis, segmentation and feature extraction that are done using softwares like Lightwave 3D, Photoshop and Lightroom.

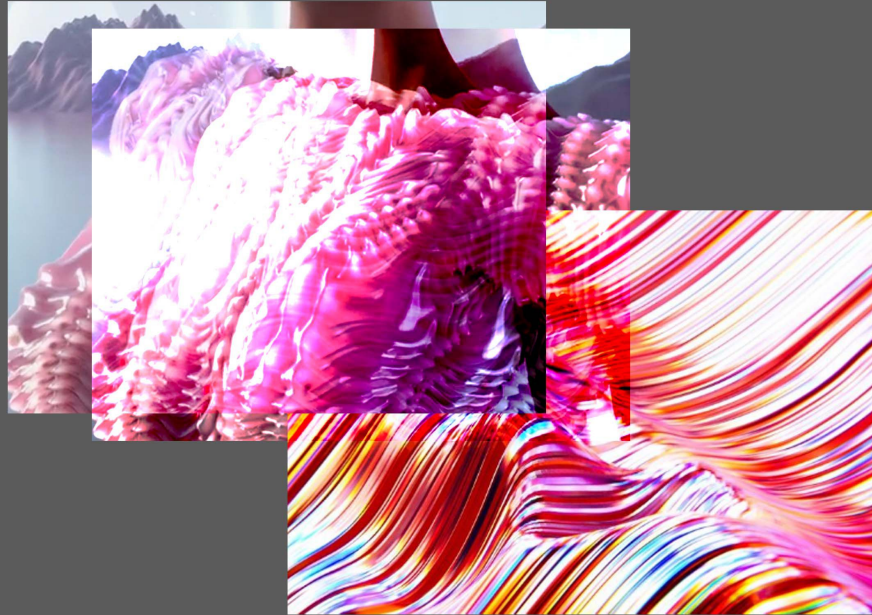


The first thing that comes to my mind when I think of science are some bunch of words that can be an inspiration for design. Design is further more than just an inspiration. Its how you claim a difference, bring an impact and deliver a valuable message to the society. The intricacy of bio design in nature is fascinating. And when you say microorganisms, the detailing of these organisms is alluring. As a part of my research I wanted to study the behavioural aspects of these structures and transform them into the language of design through a creative sustainable process.

When someone says 'BACTERIA' there are millions that may feel disgusted seeing the naked structure. But these amazing creatures can surprise you with their various reactions to environmental factors. The focus of my research is to record these different reactions and study thoroughly their nature under various conditions. After which, using the digital techniques of image processing and form deriviations, I want to transform them into textiles that are reactive in nature just like these organisms are.

Digital transformation technology is also a part of the sustainable design process and used as a technique for form deriviations done digitally. This means avoiding manual printing costs.

Through my research I want to challenge the perceptions of disgust towards these structures and extract the beauty and unique features they dwell with in nature. Of course playing with nature can surprise you at every stage.

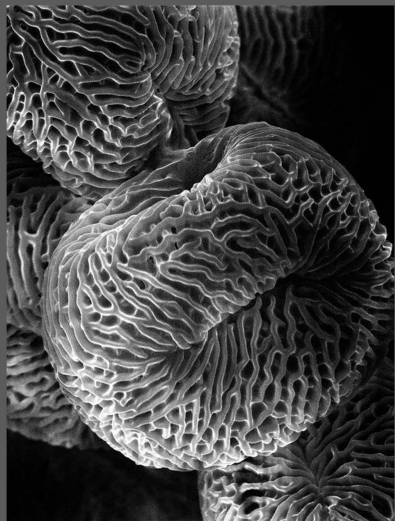
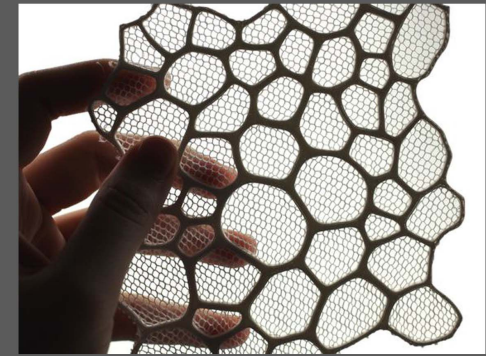


TEXTILES

The derived forms generated would still be the raw version of designs. The further tasks is to convert these forms into displaced algorithms that are visually moving within the virtual textile. Later break down these combinations into separate patterns into the real world.



Digital transformation technology is also a part of the sustainable design process and used as a technique for form derivations done digitally. This means avoiding manual printing costs.



Virtual textile are a combination of algorithms used to depict the various displaced version of the final texture created. Evolving or transforming from one texture to other in an enclosed boundary of the virtual textile is the main motive. The main aim was to breakdown the recorded behavioural study from the experiments into the virtual textile. We are in an era where we bring the best of both the worlds. The creation of this virtual textile is my exploration with been expressed in a way that brings out the uniqueness in the virtual world.

The second half of the project research is based on breaking down those algorithms into real world fabrics that are highly reactive in nature. This will be achieved through 3D printing. 3D printing is the process of converting the 3d representation of the model into real time model by printing it laying down many thin layers of material in succession.



IMPACT

Environmental Impact

Main Stage

Social and economical goals

Offering competitive advantages to the companies

A closer look on the design process

Promoting sustainable analysis

Goals fulfilled as a nation

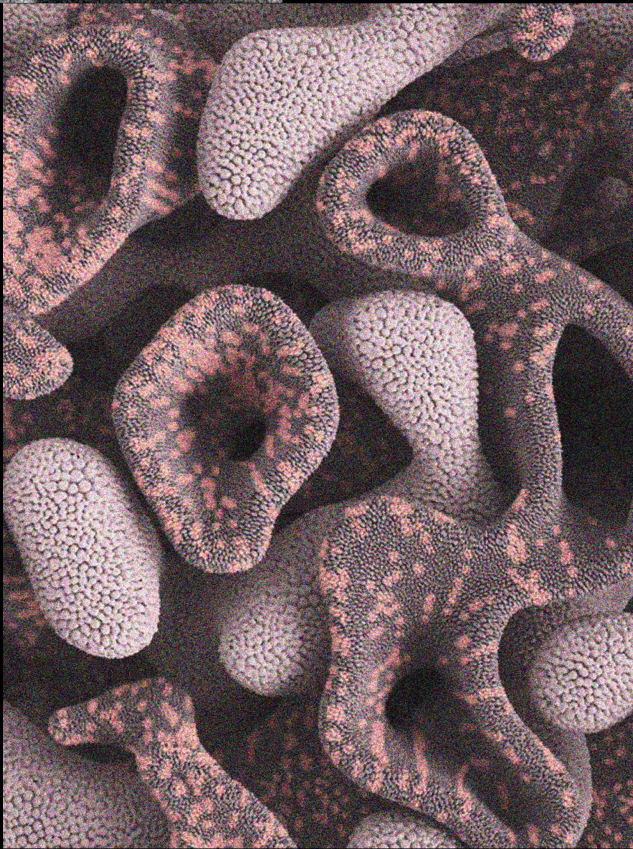
Calculating the product footprint and potential for maintenance can help saving cost for the industrial design process.

Final cost calculation

Alternative changes on each step

Helps designers to test beforehand

REDUCED RISK



Product life span that directs product performance. Considering other assessments.

Targeting consumers with the duration of products used. Consumers with sustainability awareness would promote careful choice of products.

Enhance cost reduction in manufacturing process. This two product way promotes long lasting performance of products for consumers too.

Promotes sustainability playing a role in reducing the waste generated by industries.

Product factors are derived from the material and energy consumption of the products.

Strategically planning and carefully calculating the algorithms of product performance can reflect over the product and design and development. In fashion it can enhance fast fashion consumption.

Product performance and duration can also reflect on end of life options for the product. This includes how the products are to be disposed off. This includes recycling, upcycling and even options like charity.

Other options like maintenance and repair depends on the categorisation of the products.

Product analysis enhances performance and calculates ways to be disposed. This analysis is a crucial step for promoting sustainability for designers, manufacturers from companies and consumers in the market.

CONTRIBUTOR

Every year more than 70% of consumers, designers and manufactures are influenced by sustainable values, core and principles. Very few of them incorporate these principles in their life routine.

Incorporating sustainability in the design process Identifying the weak points in the design before it goes to the manufacturing process.

All research and resource paper references.

○○○ Ensure a cost reduction method



PRODUCT PERFORMANCE

ENHANCED VISUALIZATION

Facilitates direct changes in the product through full representation of the product. Furthermore it also plays an important role in making decisions regarding the market and the industry in terms of production and manufacturing. A new lookout towards incorporating a sustainable approach towards the creation of the product.

EXTENDED

Phase of the product improving design process

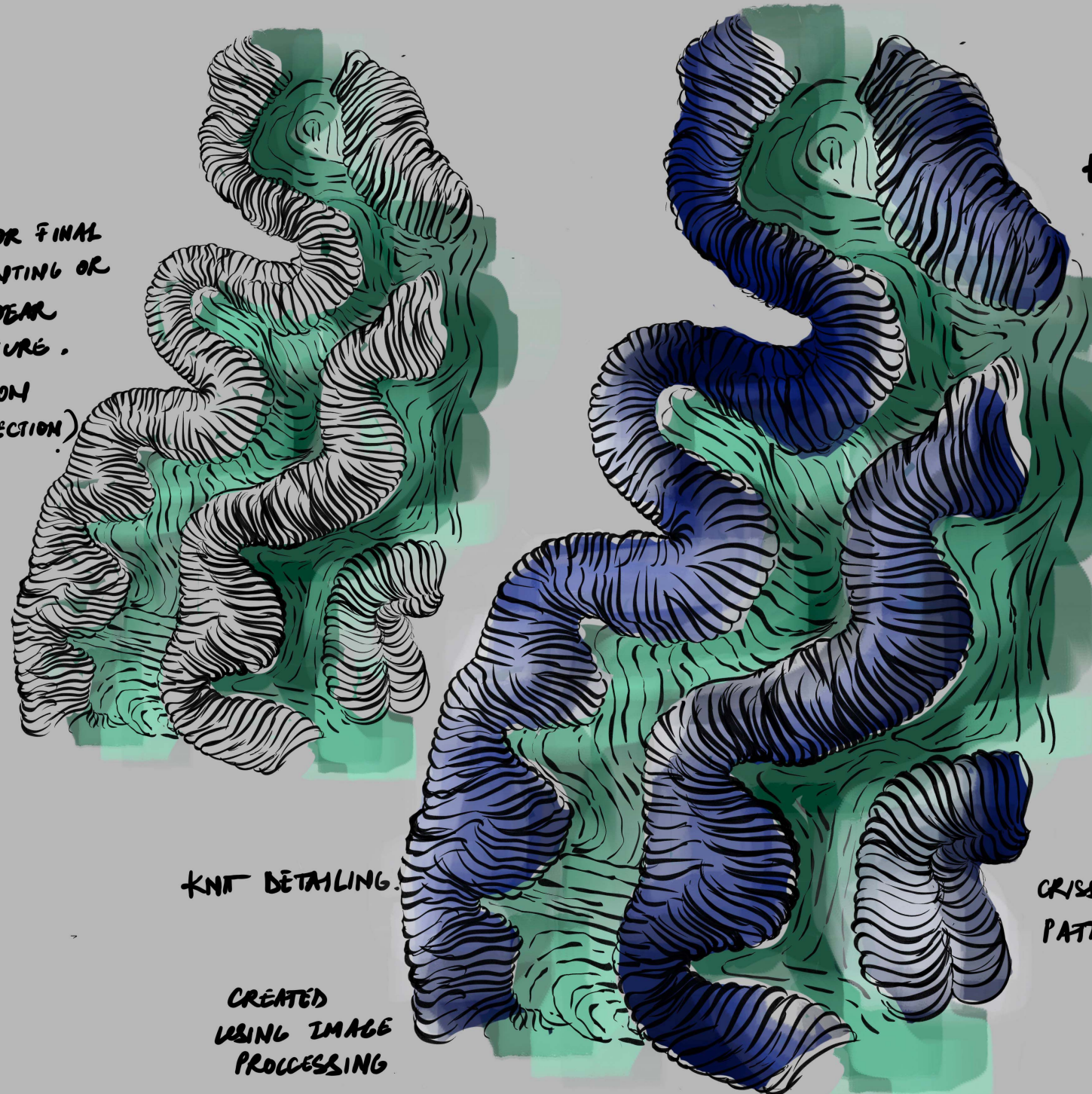
When you design according to the behaviour and need of the people, the products generated are valuable, economical and sustainable. The products then have an end of life purpose to see from creation to disassembly, repair, recycle, charity, upcycle etc.

References: sustainability workshop venture.

According to the Cotton Incorporated Lifestyle Survey of 2021, more than 52% of consumers are receptive on quality than price. Whereas only 45% of consumers were inclined towards price considerations. Consumers value durability and longevity of the products. Hence designing strategically keeping in mind these factors could be even smartly cost effective and economical.

Different products have a different life cycle and potential of dispose. When incorporated strategically as a part of the design process can change the whole conception of the product while facilitating new features.

GOES FOR FINAL
3D PRINTING OR
KNIT WEAR
STRUCTURE.
(DEPENDS ON
FINAL SELECTION)



KNIT IN
PATTERN.

INSPIRED BY
SLIME
MOLDS PATTERN.

3D EMBEDDED
EXTERIOR PATTERN.

KNIT DETAILING.

CRISS CROSS
PATTERN.

CREATED
USING IMAGE
PROCESSING

3D PRINTING DONE ON
FABRIC (STILL TO BE EXPERIMENTED)

