

How to make buttons from a piece of cloth?

A monomaterial design attempt for buttons



Designed by Wangyang Hu

Manifesto



01/Practicality First

Designs must solve real problems and meet actual needs, ensuring usefulness above all.

02/Grounded Sustainability

Building lasting change through pragmatic environmental actions.

03/Monomaterial

Simplifying sustainability, one material at a time.

04/Continuous Innovation

I commit to exploring new technologies and materials to improve sustainability in design.

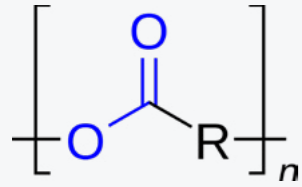
05/Consideration of the Supply Chain

Streamlining from source to disposal for a greener future.

06/Leading with Playfulness

Incorporating fun into sustainable designs can change behaviors, making green choices more appealing.

Polyester?



Polyester fiber, with its durability, wrinkle resistance, and quick-drying properties, has gained widespread application in the fashion industry. This synthetic fiber can mimic the appearance and feel of various natural fibers, such as cotton, silk, and wool, but at a lower cost and higher production efficiency. It is used in the manufacturing of a wide range of garments, including casual wear, sportswear, outerwear, and high-tech functional clothing. The versatility and cost-effectiveness of polyester fiber make it a significant component of the global fashion industry.

However, polyester fiber faces significant challenges in terms of recycling. As a petroleum-based plastic, polyester does not biodegrade as easily as natural fibers. This means that when garments made of polyester fiber are eventually discarded, they linger in landfills for a long time, causing ongoing environmental damage. Although advances in technology have made the mechanical and chemical recycling of polyester fiber possible, these recycling processes are often costly, energy-intensive, and limited to high-quality polyester waste. Moreover, the lack of consumer awareness on how to properly recycle polyester garments, along with the absence of effective recycling systems, significantly limits the recycling rate of polyester fibers. Therefore, despite their widespread use in the fashion industry, the recycling rates of polyester fibers are not ideal, posing a long-term challenge to environmental sustainability.



A significant aspect of the pollution problem is the challenge that buttons, especially those made from different materials, present to clothing recycling. The separation and processing of different materials require a complex process, which not only increases the cost of recycling but also reduces its efficiency. In this context, the use of a single material, particularly recyclable materials, for the production of clothes and buttons becomes particularly important.

Considering the recyclability and widespread application of polyester fiber, using polyester fiber to make both clothing and buttons can be an effective strategy to address pollution issues. This approach can reduce the environmental pressure caused by material diversity in the production process and simplify the recycling process, as the entire garment and its accessories can be processed through the same recycling flow. Additionally, adopting a near-shore production strategy can reduce the need for long-distance transportation, thereby minimizing the environmental impact. Imagine, if the "production" of buttons could be completed in the garment factory itself, how much transportation and production process carbon footprint could be reduced?

Material exploration and iterative process

Polycotton only (2 layers)



Nylon only (1 layer)

At first, trying to use a soldering iron to make buttons, failed

Snap Fastner Polyester wadding only

Fabric Polyester wadding overlayering



When I combined polyester padding with polyester cotton, the bump was both flexible and stiff.

Button Polyester wadding + Polycotton



Mould V1.0 (shallower). Tried a variety of fabric melts with different overlays.

Polyester wadding only



Polycotton + Nylon

Nylon only



Polyester + polycotton(5 layers)

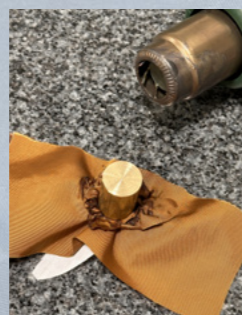
Mould V2.0 (deeper). Experimented with different types of fabrics, the relationship between layers of fabric and the thickness, hardness and elasticity of the bumps.



Nylon only

Mould V4.0. In order to make the button more like a button, I developed this mould, which allows the top of the button to become larger than the bottom by repeatedly melting and stacking fabrics, thus allowing the button to be more securely fastened in the buttonhole.

Polyester only (10 layers)



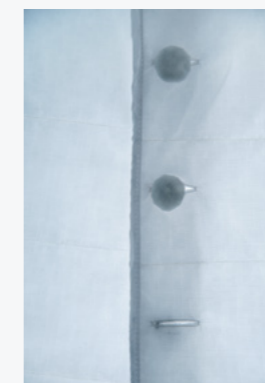
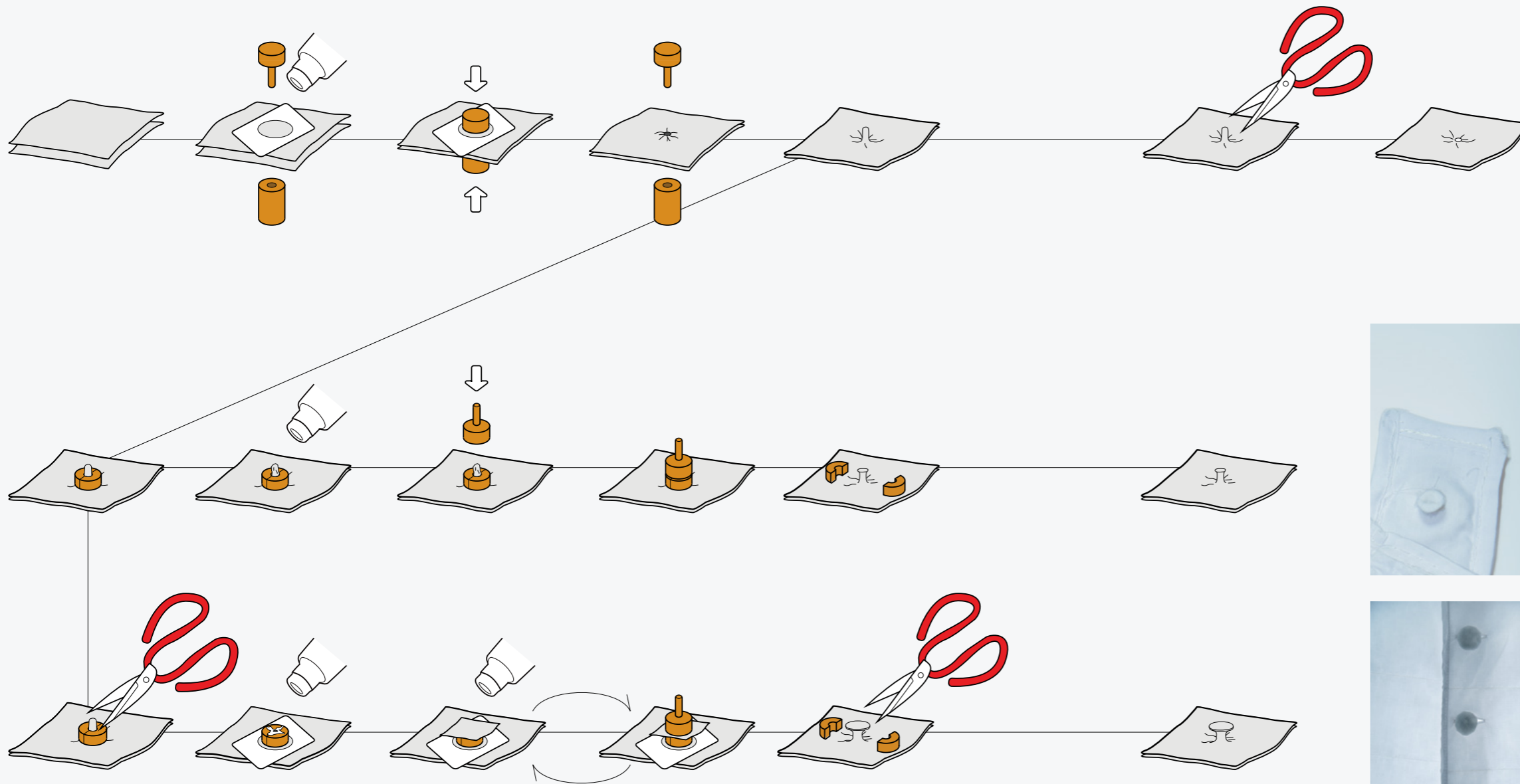
Once I tried polyester wadding, I found that it was easier to control the melting temperature and the resulting bumps, although not very hard, were very flexible and wrinkle-free. I decided to continue working with this material.

Mould V3.0. Try to make a button. Failed.

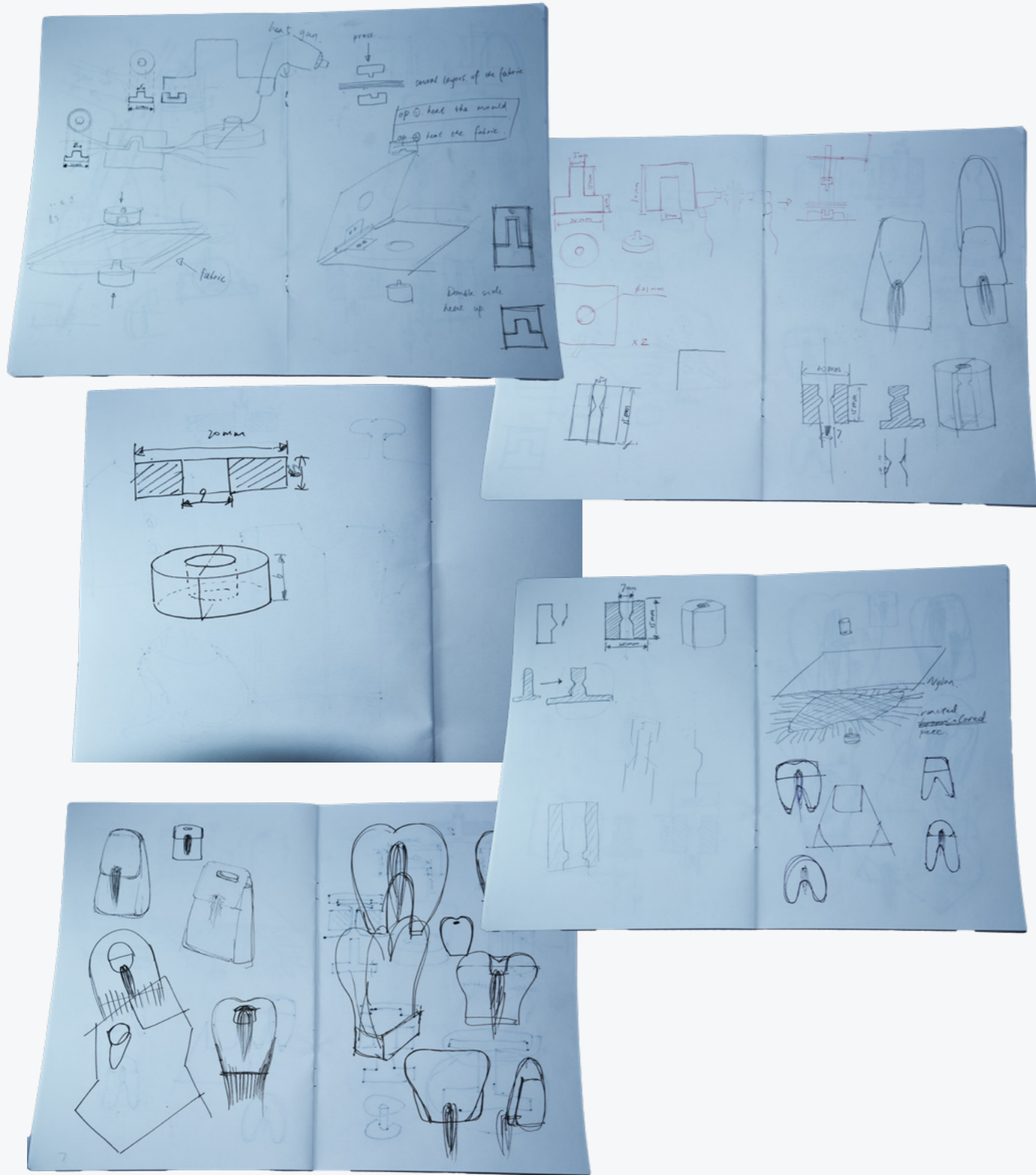
During repetitions of the experiment, I found that the surrounding fabric was easily distorted by heat - something I didn't want. So I developed panels with holes punched in them to insulate the heat.



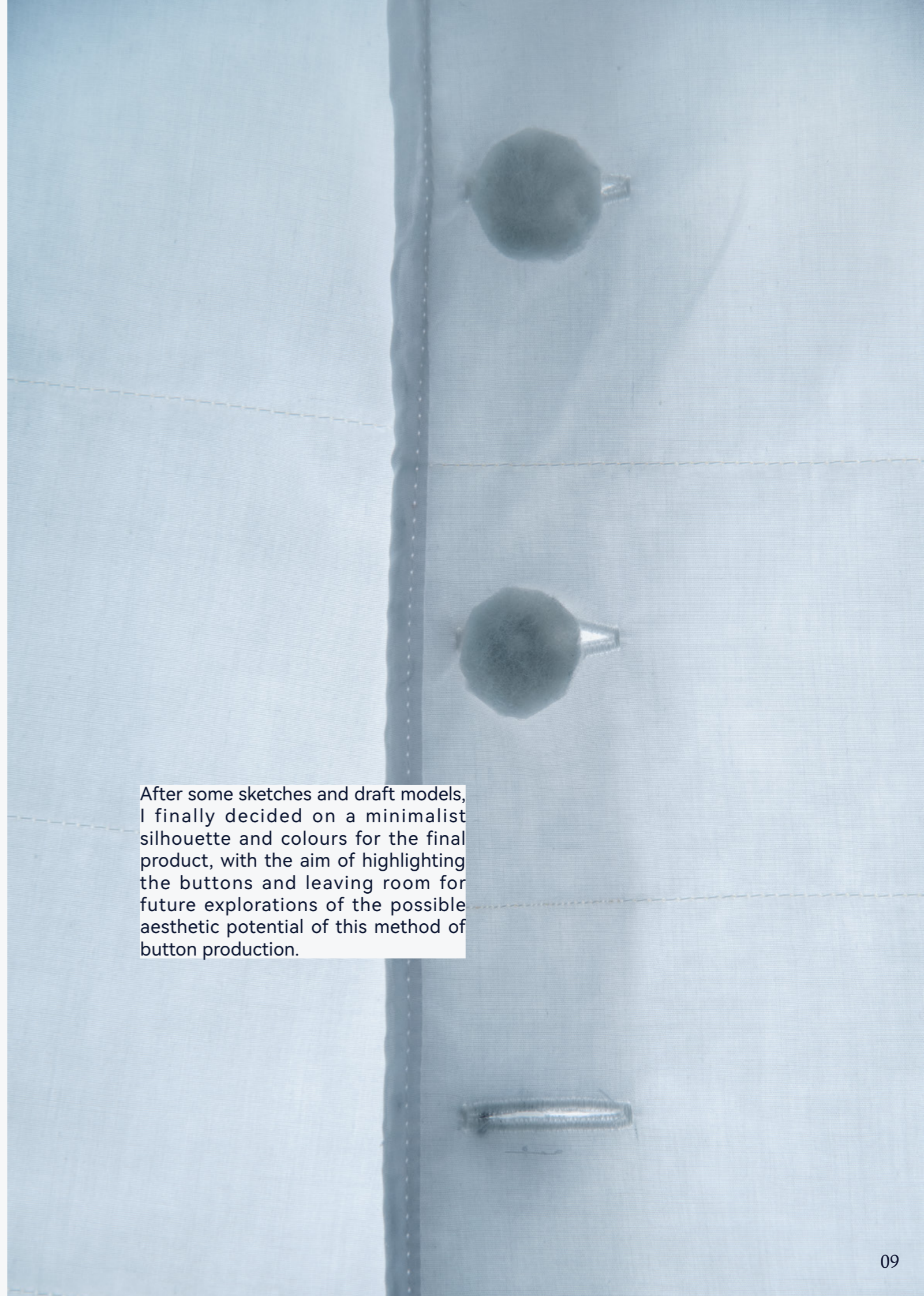
Production process up to now

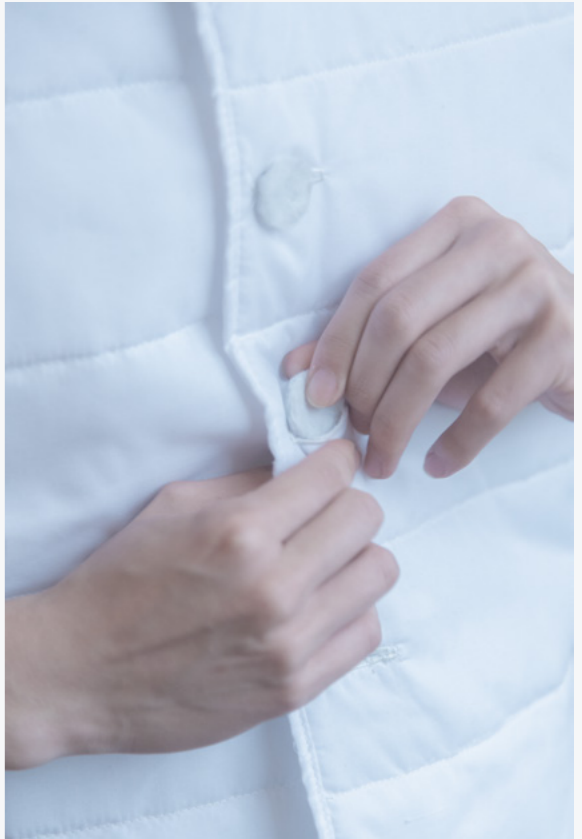


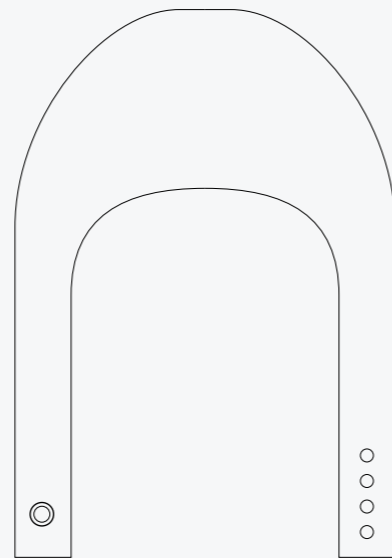
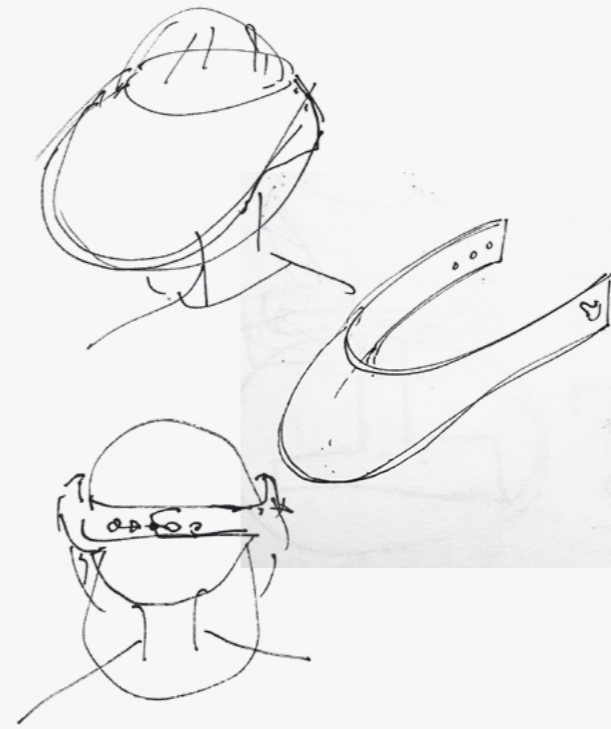
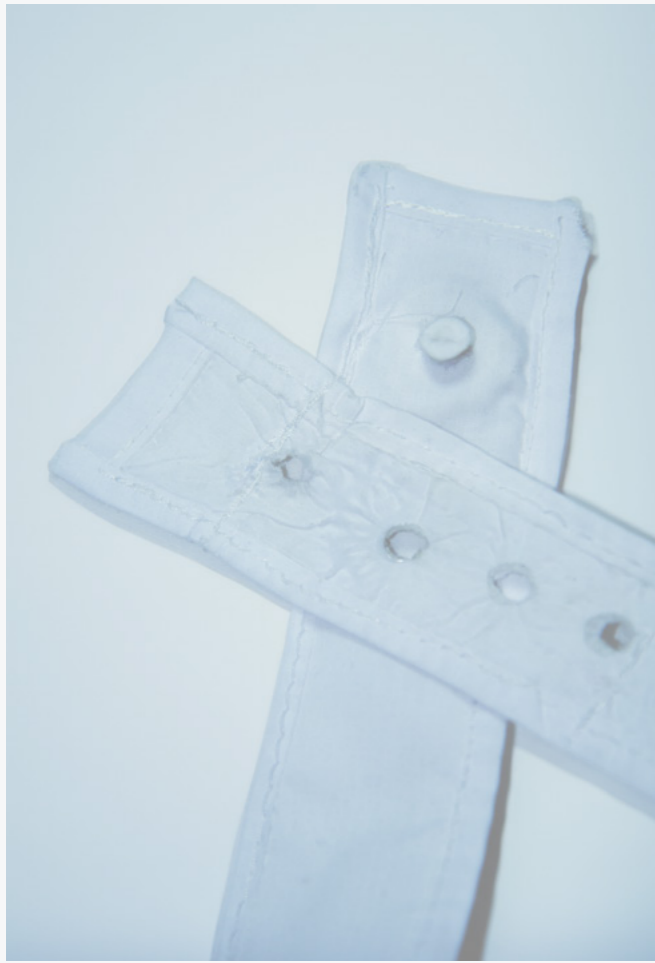
Product development



After some sketches and draft models, I finally decided on a minimalist silhouette and colours for the final product, with the aim of highlighting the buttons and leaving room for future explorations of the possible aesthetic potential of this method of button production.









SuperGreen Fashion

Designer
Wangyang Hu

Even in countries where waste sorting is most advanced, clothing remains one of the most difficult items to recycle. Materials widely used in the fashion industry, such as polyester fibers and nylon, have high recycling values. This design focuses on the method of joining buttons to clothes. By melting and stamping polyester fabric, buttons and snap fasteners are directly made from the fabric itself. The design is an attempt at monomaterial production for clothing fastenings, aiming to reduce the difficulty of recycling clothes. Through the production of a monomaterial, it is desired to shorten the supply chain in the clothing industry to reduce carbon emissions during production and transportation.