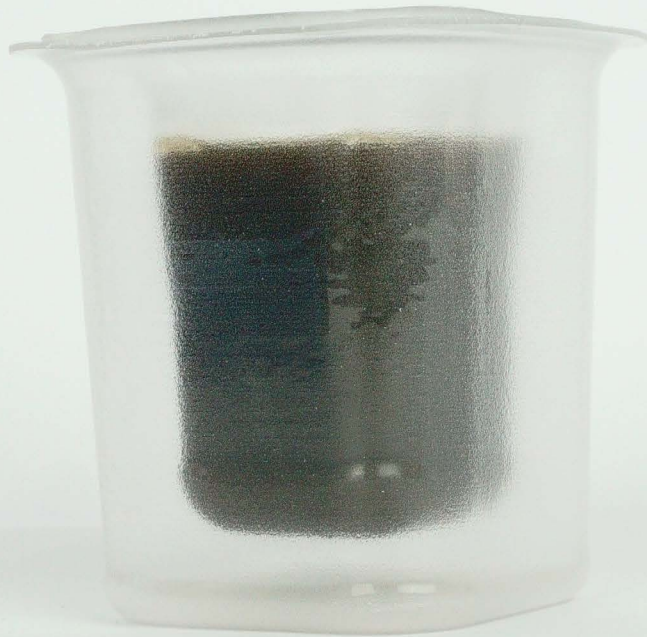


A blue plastic lid is positioned at the top of the frame, and a blue plastic jar is at the bottom. The text "CONTRADICTORY THREAD" is centered between them.

CONTRADICTORY
THREAD



Yuhang Han This container is designed for those who are willing to try the rental container as a supermarket shopping package. The container is made of ppsu provided by basf, which is lighter in weight than glass containers, cannot be broken, and can be reused 800-1000 times. When packaging is taken back from consumers by recycling companies, it can be further steam sterilized to keep food safe during the pandemic.

This was a very bad project attempt. In the process of exploration, I have repeatedly encountered obstacles due to various problems in my thinking style and personal ability. My professors, classmates, and friends all tried to help me out, but unfortunately I didn't bring them something of value. But in this experience I have learned some things that I might not normally have the opportunity to learn. If you are interested, please keep reading, thank you.

A person who struggles to learn in contradiction

zorosanjihyh@gmail.com

These are two ordinary cups. Can you see the difference between the two?

There is no thread on the left side of the cup, and there are fine threads on the right side.

After my many tests, the finalized thread angle and size are the best to keep the liquid from flowing out. Unfortunately, due to the characteristics of the material itself and the high requirements for processing conditions, although the thread is widely used in airtight structures, it still cannot achieve airtightness by its own strength.





The problem of tightness is not a single material, a single cap or a single bottle can be solved separately. Its basic logic is to use the difference in properties of two or more different materials, so that the two sides can resist each other and have to be closely attached.

The ability to utilize a contradictory scene is a weapon to isolate the two worlds inside and outside the container, and it is also a landmark behavior of human beings against nature in the issue of food preservation.

Having been focusing on the single event of sealing for so long in the course of this project, even after the material experts learned that the engineering plastic PPSU I was about to use would not solve the sealing problem, I couldn't immediately drop the subject and turned to And look for more structural or material change solutions. This is the beginning of a nightmare and the beginning of a pointless struggle.



PPSU (Polyphenylene sulfone resins) is an amorphous thermoplastic with high transparency and high hydrolytic stability.

The product can be subjected to repeated steam sterilization.

PPSU is now a relatively mainstream material for high-end baby bottles.

BPA free.

It is neither like Long-term cooking like plastic will release harmful substances, and it is not as fragile as glass.

The container of PPSU can also be used for more than 1000 times.

ULTRASON DISADVANTAGES

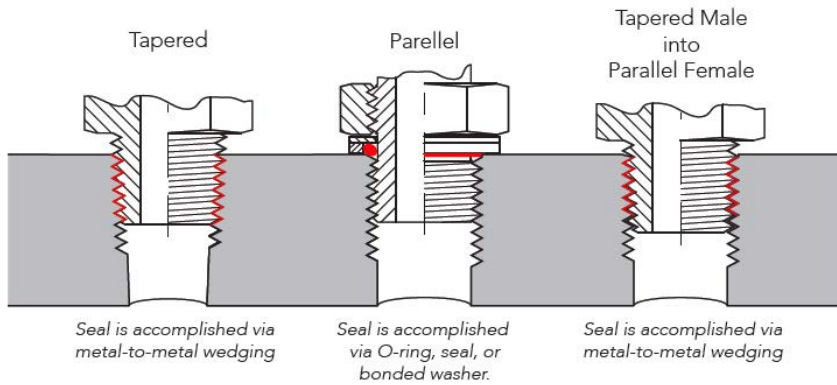
1, COMPARE TO SILICON, IT IS TOO HARD SO THAT IT CAN NOT TOTALLY SEAL THE BOTTLE BY ITSELF.

2, EVEN THOUGH IT IS TRANSPARENT, PPSU IS ALSO EASY TO GATHER THE BOTTLE SCUM. AFTER A LONG TIME TO USE IT IT WILL LOOKS DIRTY IF WE IGNORE IT.

3, MUCH EXPENSIVE.

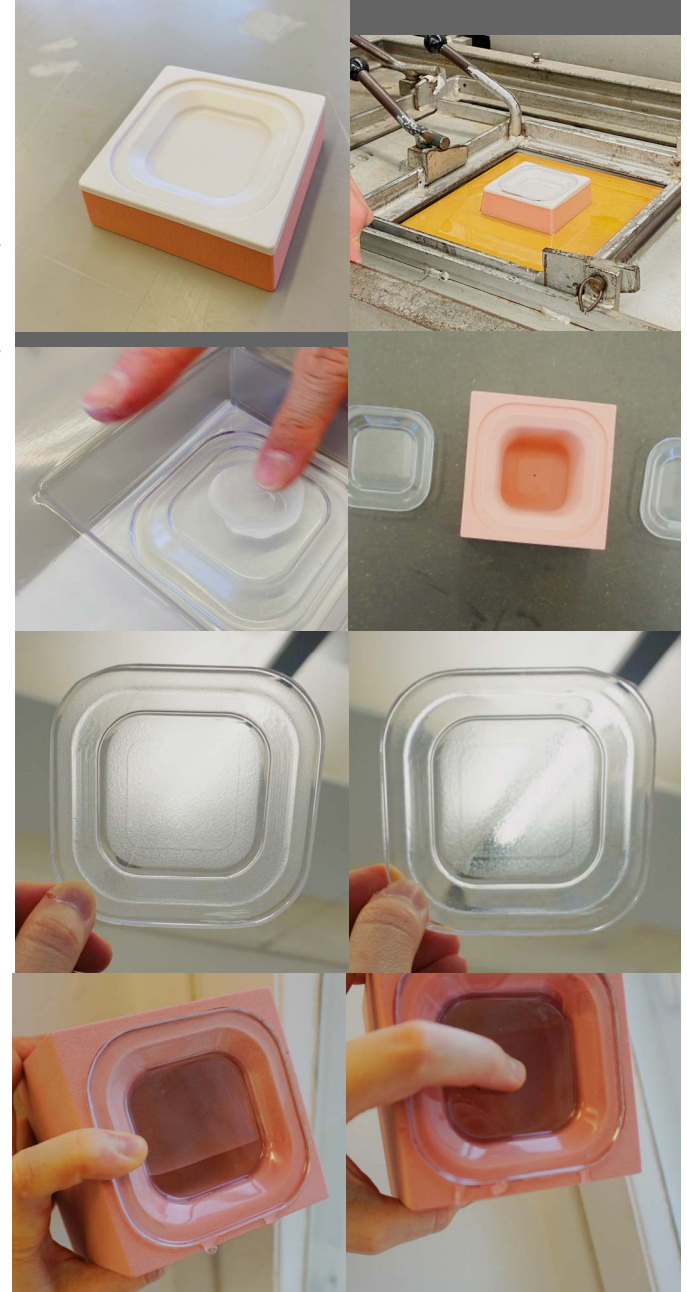
After I ignored the expert's warning and still uncontrollably made a thread out of PPSU to see if it really couldn't be sealed, the project went to a dead end. I've never been able to convince myself that what I end up with is a leaky, unusable cup. So I kept looking up data and doing experiments trying to prove that this is possible.

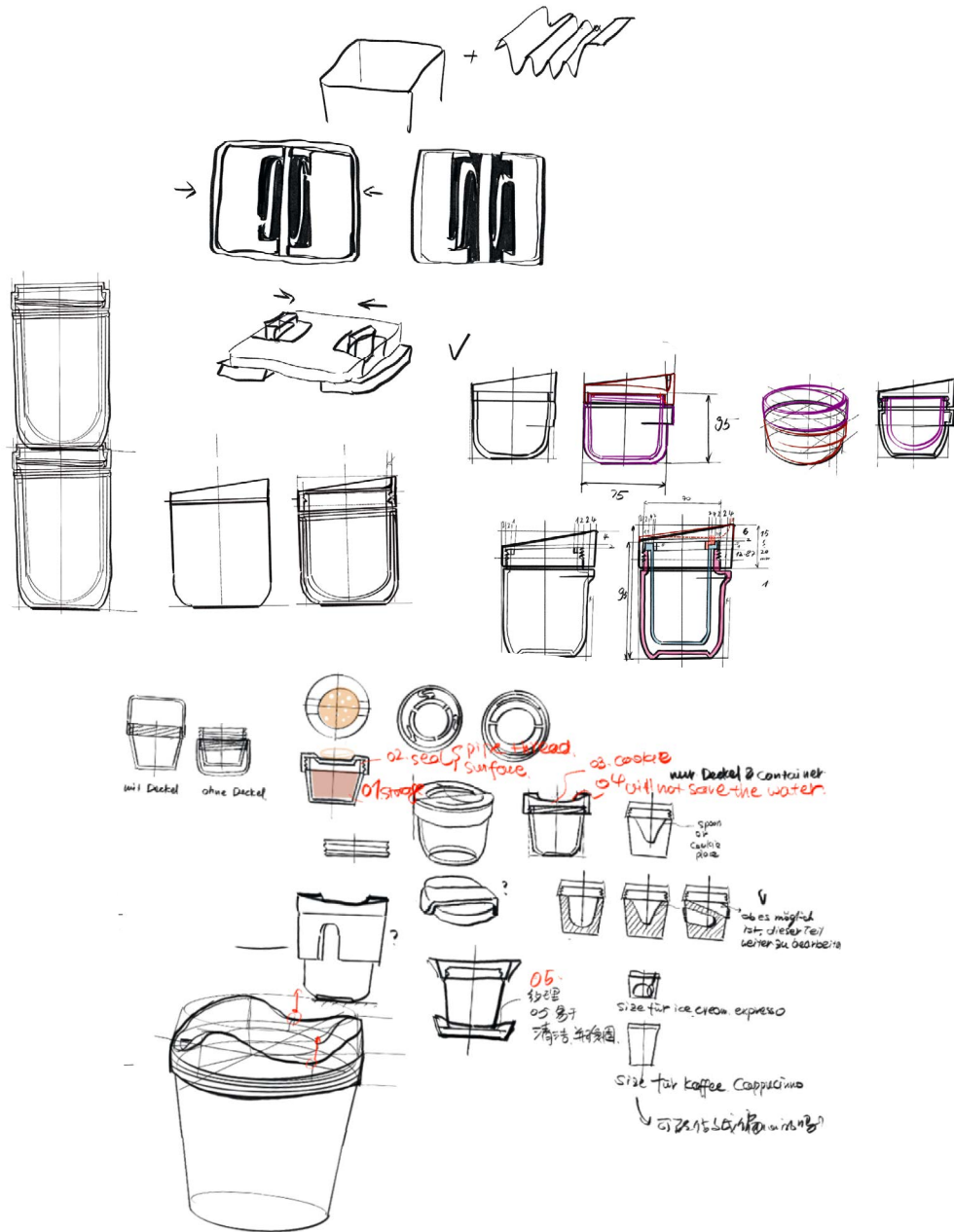




Make lids with matte and polished surfaces to test which finish is better for tightness.

Some other experiments now seem absurd and pointless...





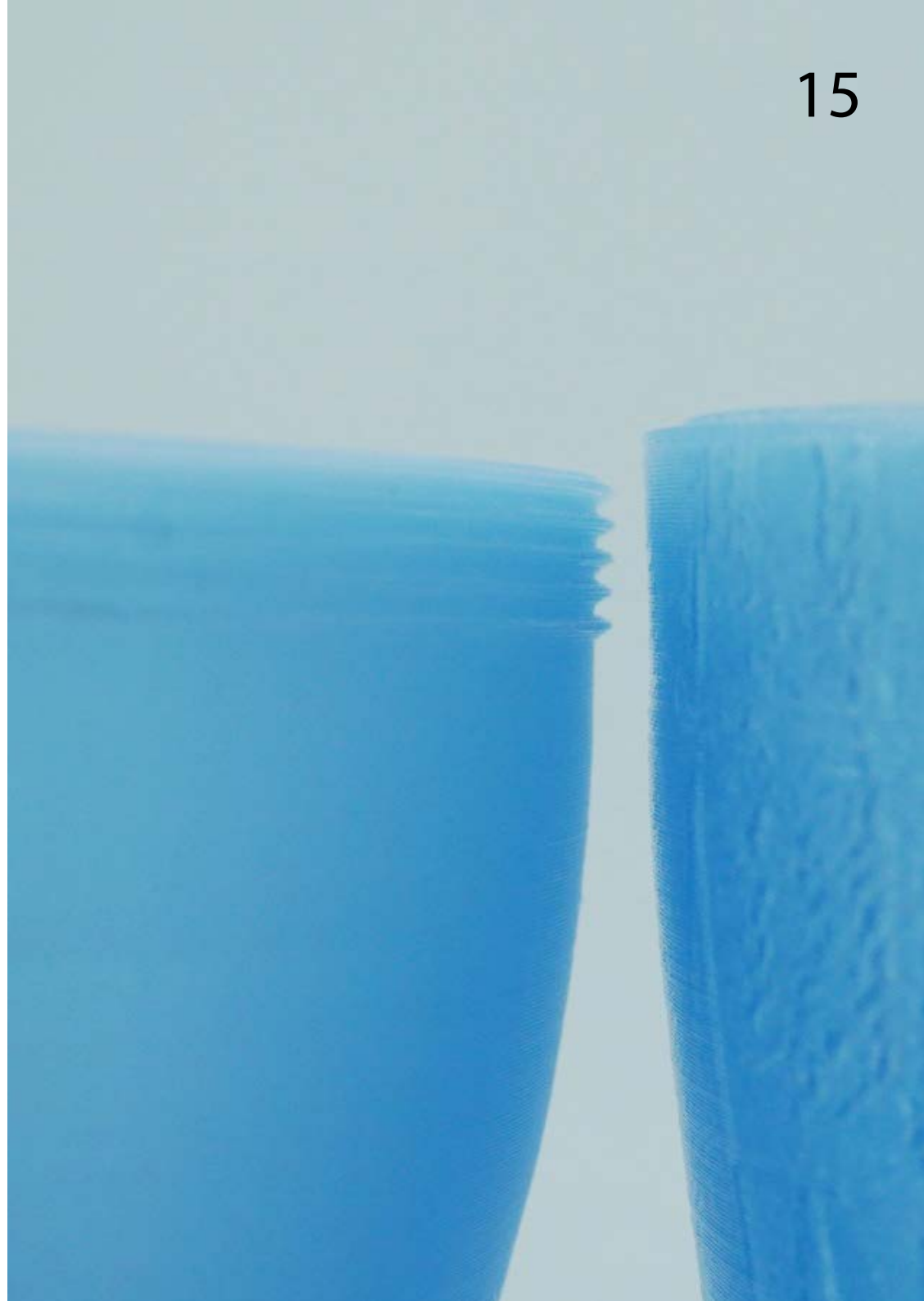
But no matter how much functionality I add to this screw-closed cup, after many citing experiences, I found that the problem of water leaking from the mouth of the cup is its major flaw. So I thought again, as a cup for quick coffee drinking in a convenient scene, do people really need a lid?



The bad effect of threads on the mouth of the cup is not only its limited ability to prevent water leakage, but also leaves coffee marks in the grooves, which are difficult to clean. In the long run, the parts in contact with the lips may have bacteria growing in the slits, or there may be residual coffee or milk dirt that is difficult to clean, which is difficult to ensure hygiene and affects the user experience. Conversely, so does the threaded structure on the cap.

And if we include both coffee cups and lids into the deposit system in the recycling system, a coffee shop or a coffee vending machine needs to store the corresponding matching lids and cups in order to meet the needs of everyone who wants lids. But the reality is that in this "supermarket-buying coffee" scenario, people tend not to spend too much time finishing their coffee, so many people don't need a lid.

As a result, I had to give up the thread structure. He can find a field that can be more suitable for him.



implementation strategy

1. order

order a To-Go drink in the supermarket instead of in a disposable cup, deposit a 1 Euro deposit. If you still want a lid for the cup, you can also deposit 1 more Euro.

2.return

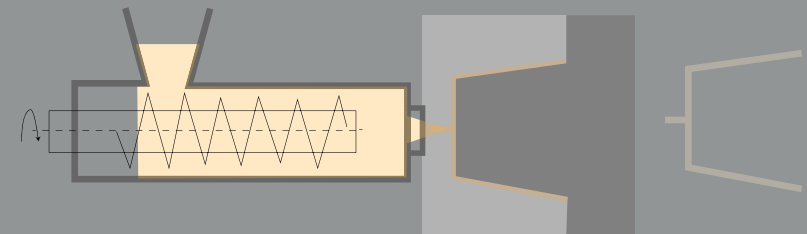
return cups to all supermarket which take part in these programm throughout germany and get a 1 Euro deposit back, It is the same to lid.

3.clean

the staff in the backerei of supermarket use the dishwasher to wash the returned cups and lids.

Coffee cup lids can also be part of a rental recycling system. But renting the coffee cup cover alone also involves the problem of distribution regulation. Then the coffee cup cover can share a function with the tableware. If someone needs to rent the cup cover, the small saucer is directly rented to him, and the deposit system is also adopted.

Proposed materials and manufacturing methods



The coffee cups will be machined from PPSU using an injection molding process.

The impact

About 2.8 billion takeaway coffee cups are consumed in Germany every year, at least before the outbreak. These cups are incinerated or landfilled after use because they cannot be recycled due to the coating in the cups. In 2016, while at university, out of anger at the accumulation of paper cup waste, the founders of RECUP came up with the idea for a storage system for reusable carry-on coffee cups across Germany. "They're connecting all the coffee shops, all the bakeries, gas stations, or anywhere coffee is served through a large network, so that customers can borrow reusable cups anywhere and return them anywhere."

This is an organisation that is very effective and has a significant social impact on a European scale.

However, the lids of the recups they provide are purchased by the customers themselves. But if we could incorporate the lid into the recycling system, it would save consumers the hassle of carrying a lid with them every day, so that people who bought coffee and couldn't drink it in a while could rent a lid, Prevent outside dust from falling into the coffee. An optimized experience may attract more people to participate in this social behavior.



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