



**PAULA NERLICH, GERMANY**

## Aqua Faba Foam

Material Designer Paula Nerlich is developing a bioplastic based on aquafaba from chickpeas as part of her research into circular, compostable biomaterials.

The material, which is currently under development, shows great potential for mechanical manufacturing and thus for industrial production. The biomaterial varies in color from cream white to pink and changes its color over time. However, it can be dyed with natural or food colors. The structure can be flexible or hard, the recipe is adaptable. The biomaterial is completely vegan and biodegradable. Compostability is currently being tested.

The temporary nature of biodegradable biomaterials reminds us of the flow of nature and makes us appreciate the quality of impermanence. The transience of the materials has the potential to create a higher value in the end product, while also emphasizing the circular nature of the material.

**SILVER AWARD WINNER**

Paula Nerlich, Designer & Co-Founder Circular Home Lab, Germany





## Coffee Talk with Paula

### **Please tell us about yourself and your sustainability journey.**

I'm a Material Designer living in Berlin currently. I have a background in Textile Design and moved towards sustainable materials design exploring and creating new biomaterials from food waste. Apart from doing that, I'm starting my PhD at the moment, researching how to create structures with living materials. When I was a child, I decided to become a vegetarian and I think that was when I became more aware of everything being connected in the living world and sustainability being a crucial part of that. I took a few turns. I started with fashion and discovered that it's so unsustainable. Then I continued to study textiles, finding new ways of creating materials with raw sustainable ingredients.

### **Can you tell us how you created the Aqua Faba Foam?**

The aim was to incorporate a by-product from food production and I chose aquafaba, the starchy liquid that you get as a byproduct from cooking chickpeas. I did two things – I wanted to create something beautiful and I wanted to create my own recipe. I experimented a lot and one day I had a bioplastic-like material. I started creating prototypes with clients and I'm continuously trying to find a way to get this material refined and manufactured. That is the ultimate goal of any material designer within the Biodesign community. Many of us create our materials and might not manage to bring them to the market, or we decide to use the material to create statement pieces and use it for communication, design, and art. Ultimately, I would like to get it manufactured on a slightly larger scale, not too large because when you work with food production byproducts, you need to be aware of the limited resource.

### **What do you see as the biggest obstacles going into production?**

To go into production, you need a really large budget and part of that budget would be needed to get certificates. If we're looking at packaging, we might need a food safety certificate. We will need a lab testing of all the properties, so I guess the main challenges are funding and production partners that are open to explore new materials. And if you produce packaging, it needs to be part of some sort of recycling stream. The local waste management systems do not necessarily yet embrace those new materials depending on where you are. One has to ask: Can the biomaterial be composted? Is that household compost or is it industrial composting? Will it get recycled or reused?

### **What do you think we can do to solve the plastic pollution problem on a large scale?**

I think I would go back to the communication issue. There have been a lot of amazing campaigns that have changed so much. The plastic pollution problem has gained a lot of awareness from people, but it's not yet enough. I think what BEYONDPLASTIC is doing, for example, is really relevant, because we need to continue to talk to all the different participants, not only the end-users but also manufacturers, big corporations, and so on. It's still a long journey, but I think talking about it and showing potential alternatives will really change the way we do things and help in the long run, although we're running out of time so we need to do it rather quickly. It's about changing our patterns and gaining and exchanging knowledge to sustainably create change.



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