

A person is shown from the waist down, wearing a light-colored, mesh-like crop top and shorts. They are holding a large, woven basket filled with various seashells. The background is a blurred view of the ocean with gentle waves. The overall mood is serene and coastal.

OCEAN

BREATH

a shared rhythm



LAURIA
MUTH



FABRICADEMY
textile and technology academy

IBERO

PUEBLA

2025/26

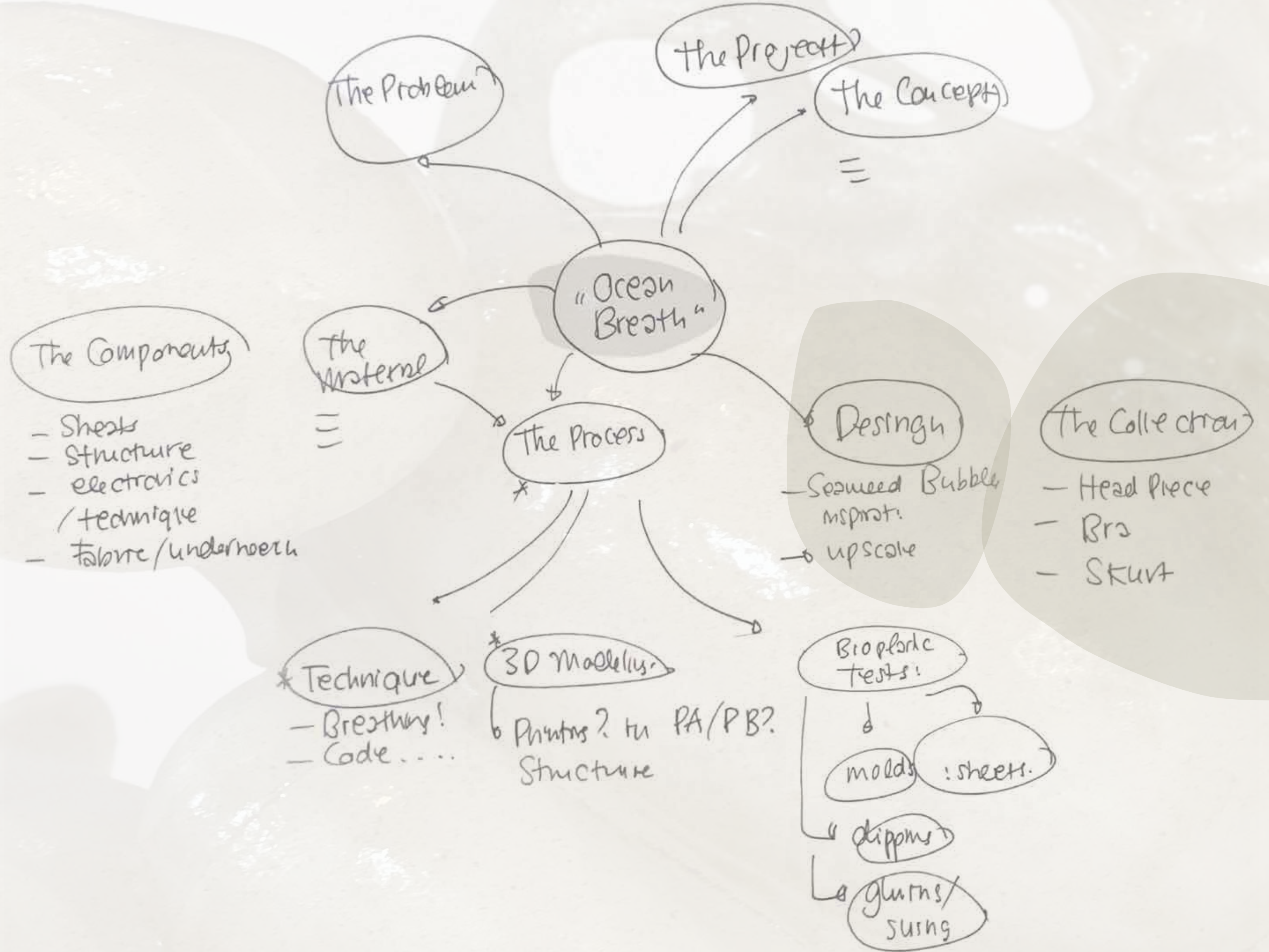
THE PROJECT

Sargassum, a brown seaweed spreading along the coasts of Mexico, exists in a state of contradiction: both pollutant & resource, excess & opportunity.

Ocean Breath transforms this invasive seaweed into an interactive, biofabricated wearable positioned on the chest. Through subtle movement & bodily proximity, the project explores vulnerability, adaptation, & the shared rhythms between body & ocean.

Rather than designing a system that responds to humans, Ocean Breath invites the body to listen, adapt, & attune itself to another rhythm. By bringing Sargassum close to the skin, the project transforms an environmental issue into an intimate & embodied experience.





The Problem

The Project

The Concept

"Ocean Breath"

The Components

- Sheets
- Structure
- electronics / technique
- fabric / undermesh

The Material

The Process

Design

- Seaweed Bubble
- inspirat.
- upscale

The Collection

- Head Piece
- Bra
- Skirt

* Technique

- Breathing!
- Code.....

* 3D Modeling

Prints? in PA/PB?
Structure

Bioplastic Tests:

molds : sheets

dipping

gluing/suring

THE TOUCH

Imagine swimming in the ocean.
Bare skin in open water.
No protection.
Just skin, water, & breath.
& then—suddenly
—something touches your skin.

Instantly your body reacts.
You become aware.
Aware of time.
Aware of your surroundings.

You feel vulnerable.
Not because it hurts,
but because it reminds you
how exposed your body is.

In that moment, you realize:
You are not alone in this environment.

The ocean is not a backdrop.
It is a living system that continuously touches,
surrounds, & influences the body.





THE BREATH

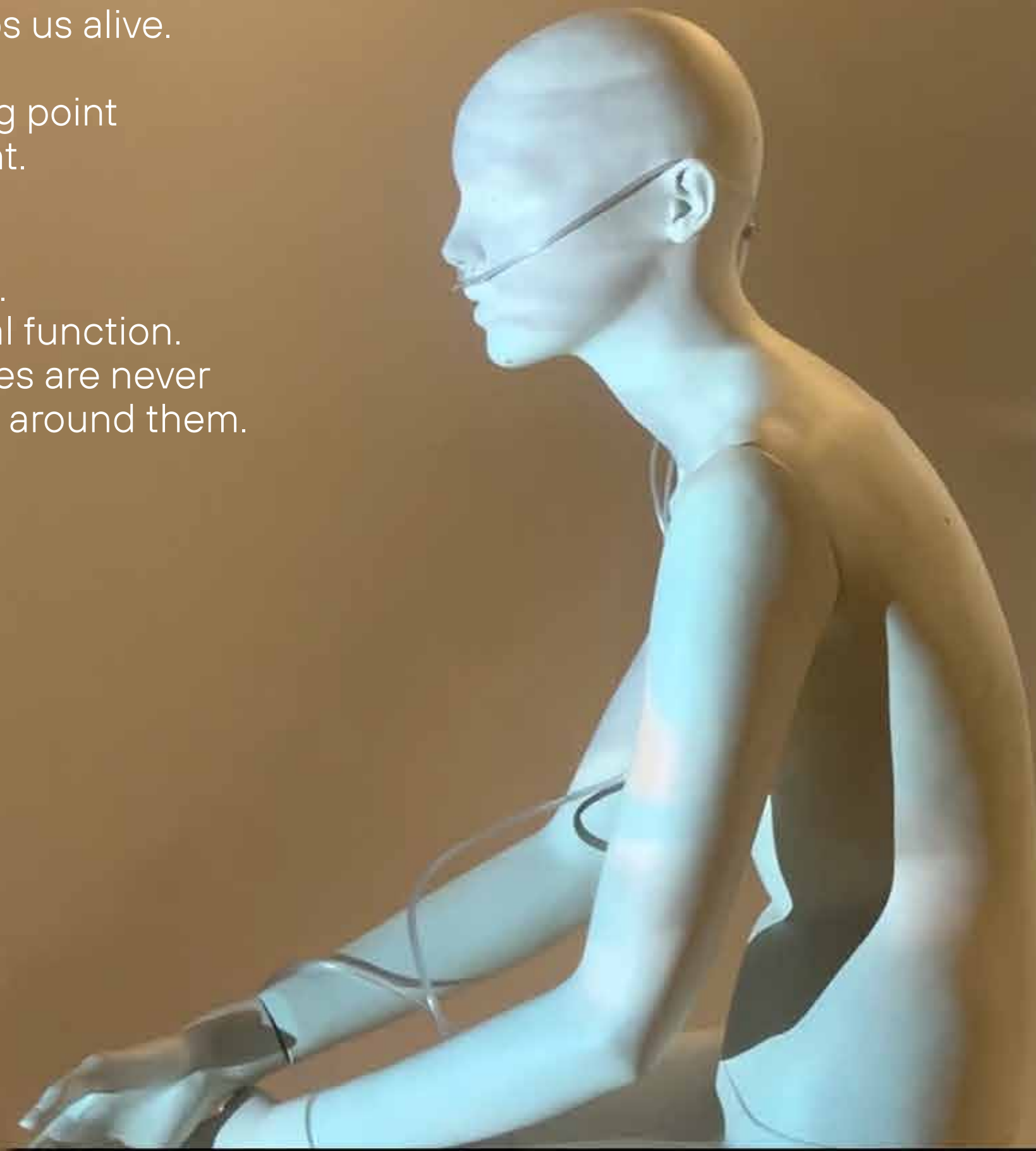
Breathing is one of the most intimate things our body does.

It happens quietly & constantly, often without our awareness.

With every inhale, something from the outside world becomes part of our inner system. A fragile exchange that keeps us alive.

The lungs become a meeting point between body & environment.

A place where outside & inside continuously merge. Breath is not only a biological function. It is a reminder that our bodies are never fully separate from the world around them.



RHYTHM

Our bodies live through rhythm.

Breath in. - Breath out.

The ocean moves in rhythms too.

Currents.
Tides.
Waves.

When we enter the water,
these rhythms begin to overlap.
Breathing slows.
The body floats.

For a brief moment, the rhythm of the
body
& the rhythm of the ocean begin to
align.

Ocean Breath explores this moment of
attunement
— not as control, but as a process of lis-
tening,
adapting, & moving with another sys-
tem.



SARGGA SSUM



SARGASSUM

THE CONTRADICTION

Sargassum is a free-floating brown algae that drifts across the Atlantic Ocean in large surface mats. In recent years, unprecedented quantities have washed ashore along the Caribbean coast of Mexico, affecting marine ecosystems, tourism, and local communities. Often perceived as waste, Sargassum also

represents an abundant biological resource. This contradiction between pollution and potential became the starting point for Ocean Breath. Rather than treating Sargassum solely as an environmental problem, the project explores it as both biomaterial and design language.

MATERIALIAL





MATERIAL AS MEDIUM

The project begins with the material itself. Through drying, grinding, blending, casting, and experimentation, Sargassum was transformed into a series of biofabricated materials. The goal was not only to develop a usable material, but to preserve the organic qualities of the seaweed.







dryed) 16 g

test 2
alginate mj

(optional)

test 3
alginate laura

alginate.

maternal list 23th Jan.
r calntaminto
s magnéticos.

capitulos 500ml.

requños" llavadora

3
↓
B MIX

Paper 3 1:8
plastic → dryed
substrate.

1g + 8g

water
90%.

200ml water
2g alginate sodium / alginate self extracted.
2.5g Glycerin

original	test R
100g	100g
6g	2g x
10g	10g

Test 1

① 200ml } Als
6g
10g

② 100ml } self
3g extracted. 2g
5g

+ Algee Pigment

0% 20g

20g

0% 20g X 20g

5% 20g X 20g

20g

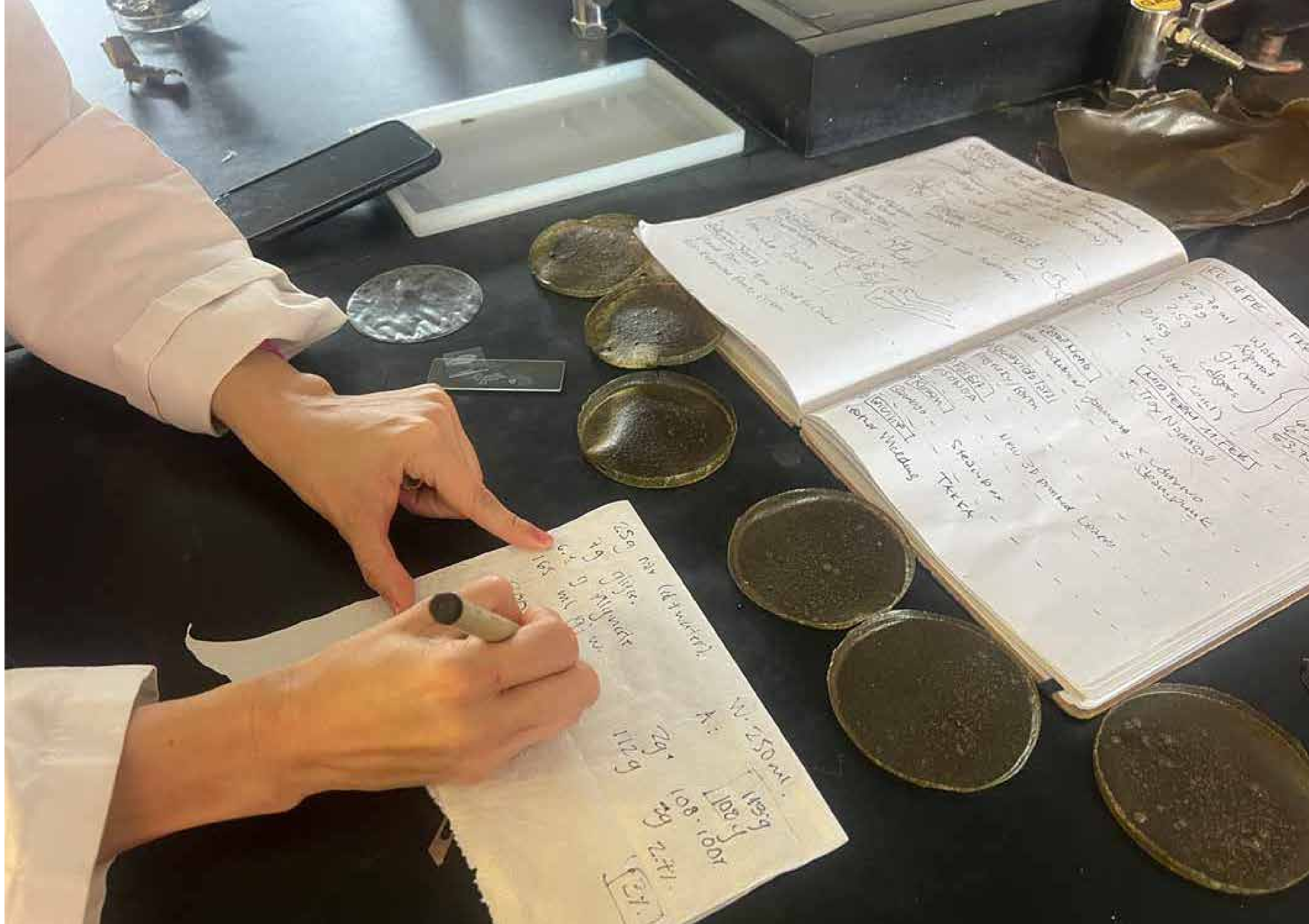
* Substr
*

100ml - 100%
(100g)

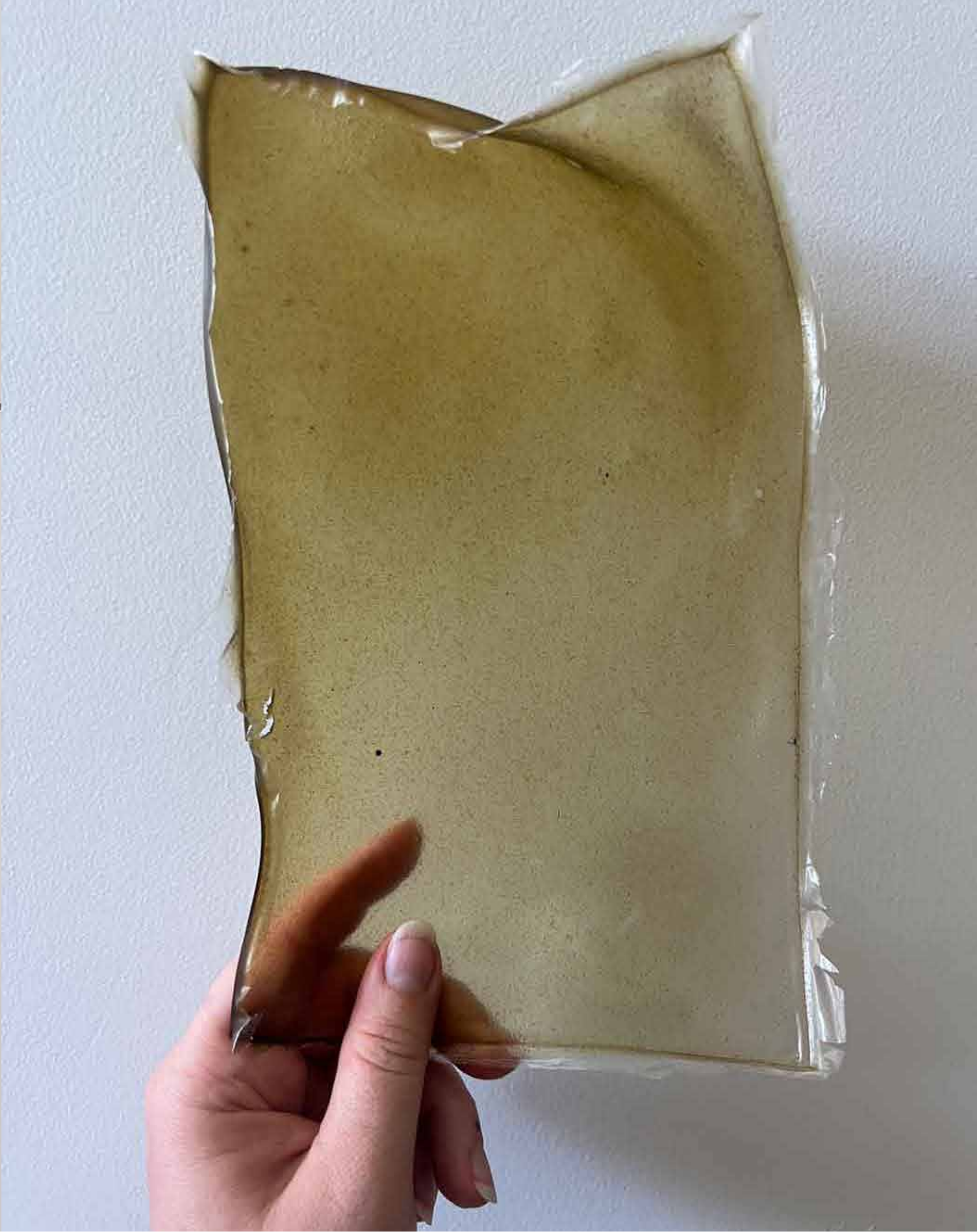
88g - 95%
→ 9.63

72.931











BIO FABRI

CATION




WORKING WITH LIVING MATERIALS

Through biofabrication, living materials become part of the design process. Instead of extracting resources, we collaborate with biological systems & their natural properties.

The resulting materials remain soft, fragile, & irregular, reminding us that biological materials behave differently than industrial ones.





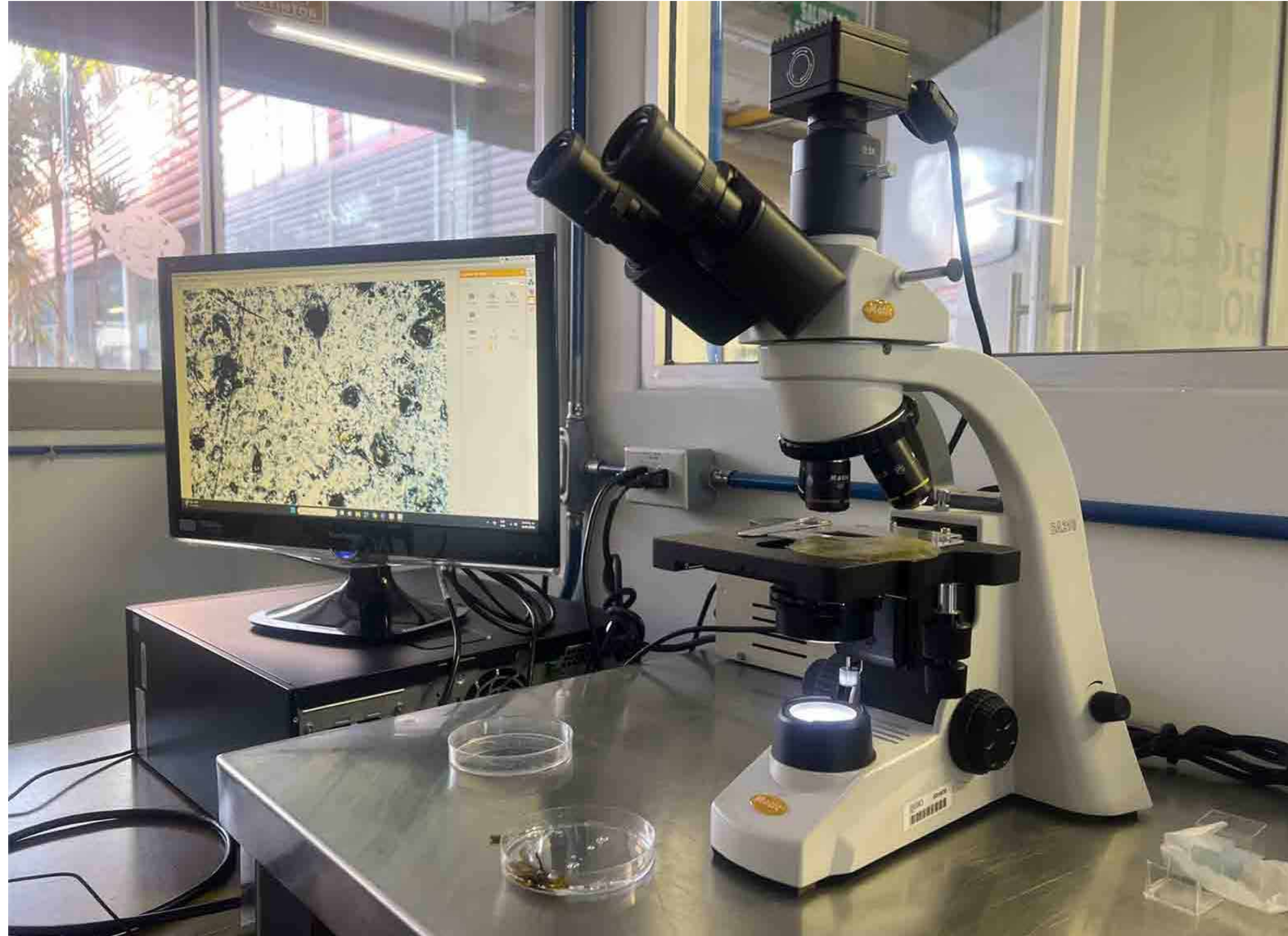


**LOOKING
CLOSER**

A circular field of view from a microscope showing a detailed, textured surface of Sargassum. The structure is dark brown and black with intricate, layered, and porous patterns. The background is a bright, slightly grainy white. The overall appearance is that of a complex, organic, and porous material.

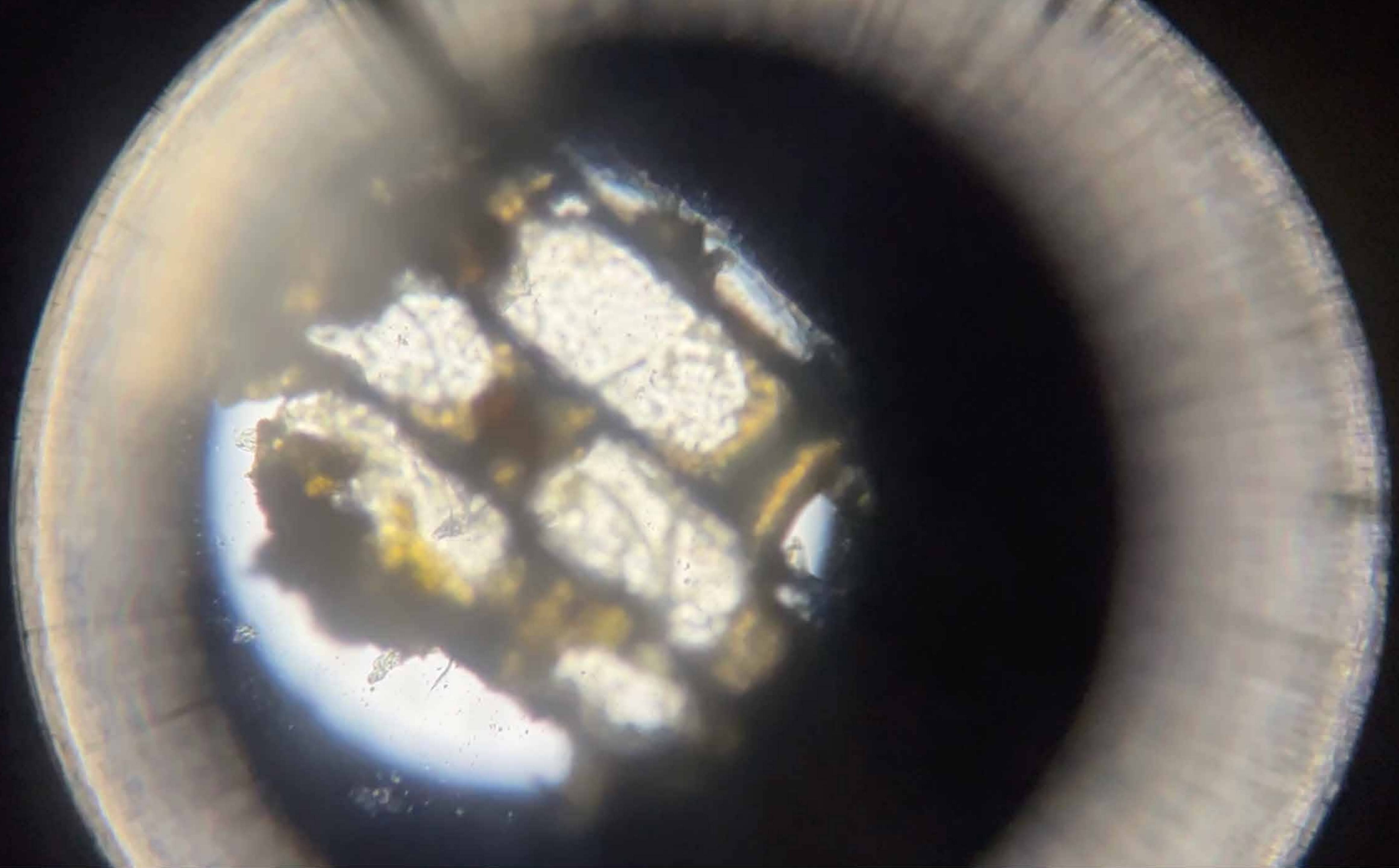
MICROSCOPIC LANDSCAPES

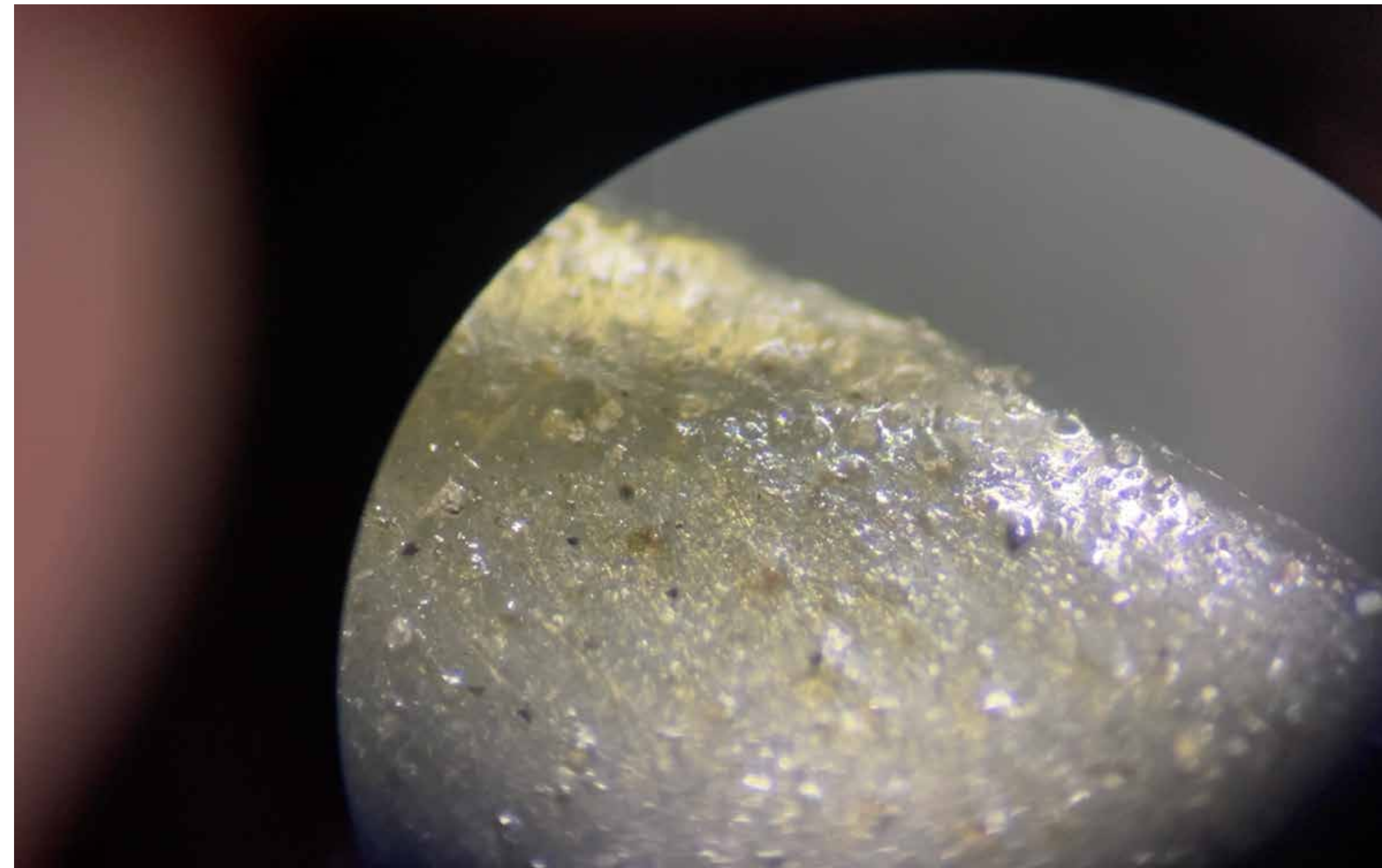
Microscopic observations revealed hidden structures within Sargassum. These textures, patterns, and cellular formations became a source of formal inspiration throughout the design process.











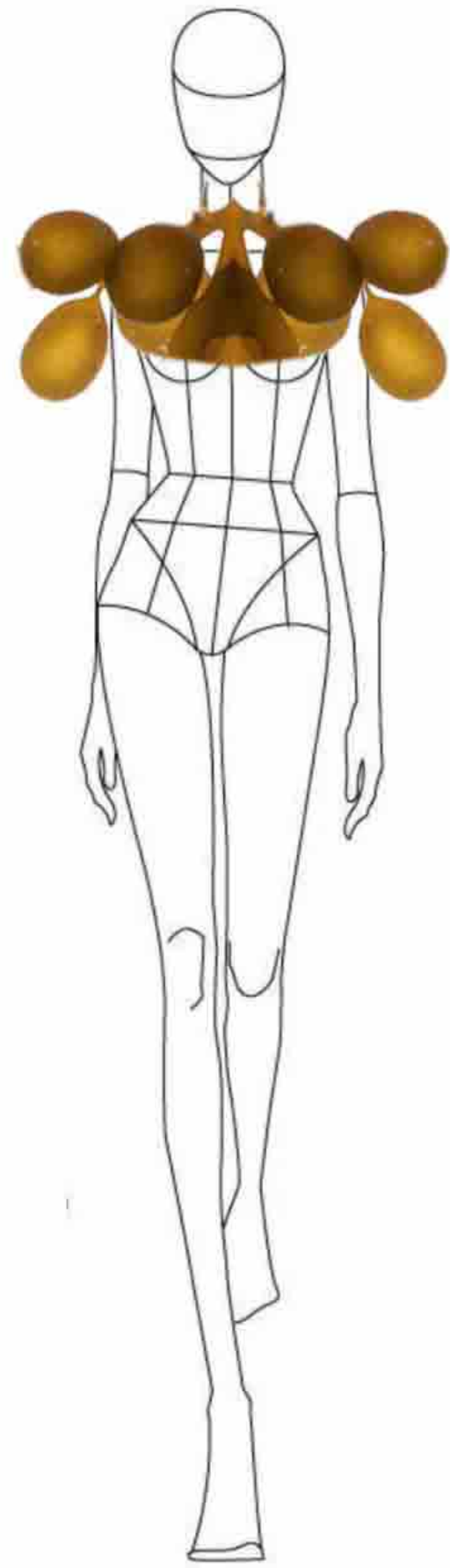
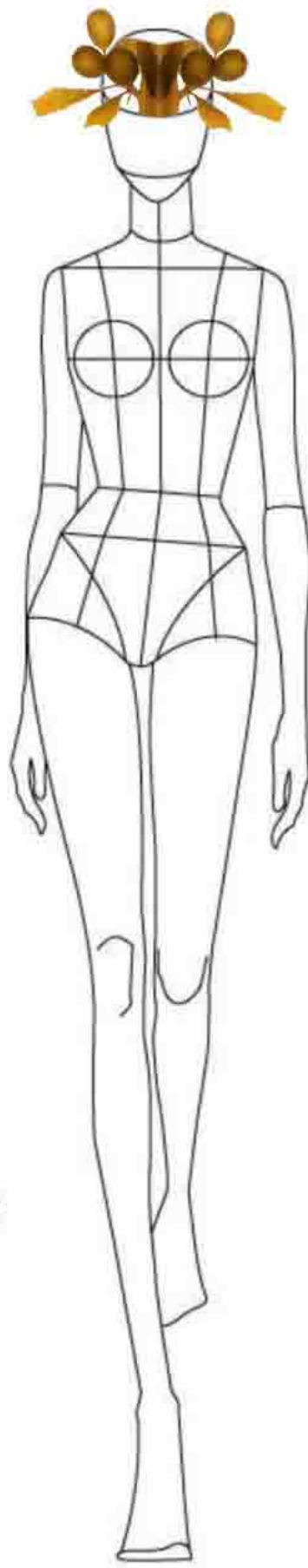
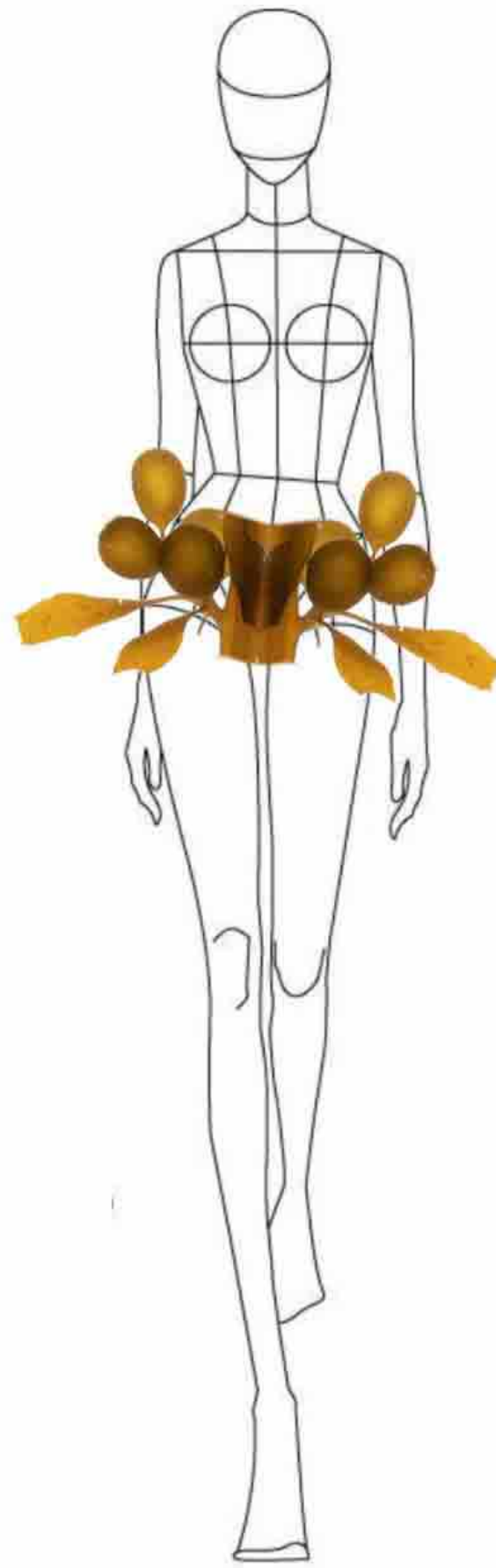
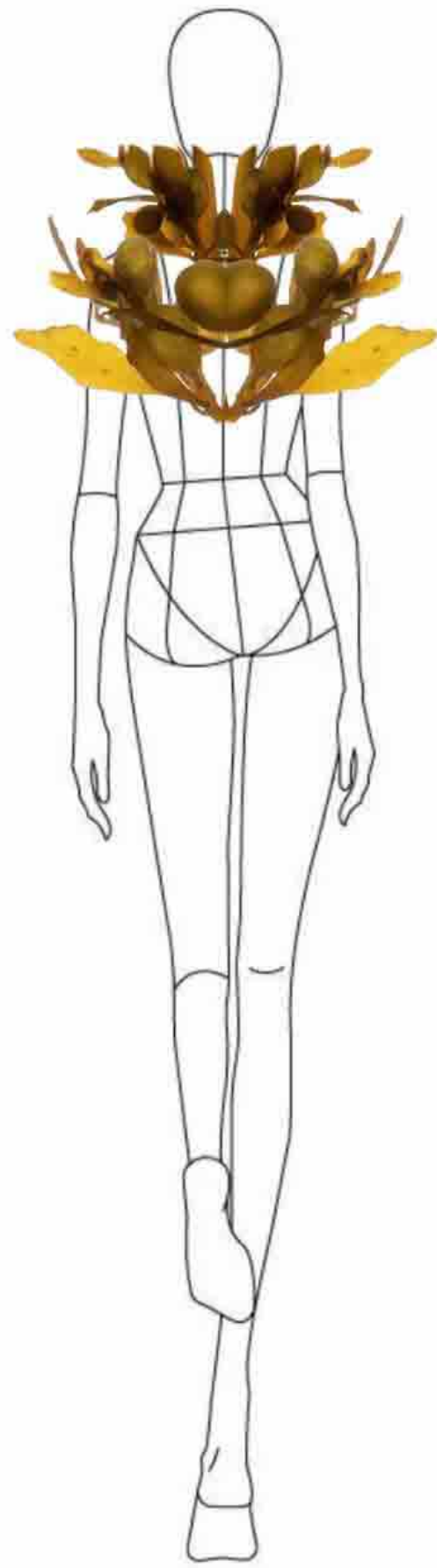
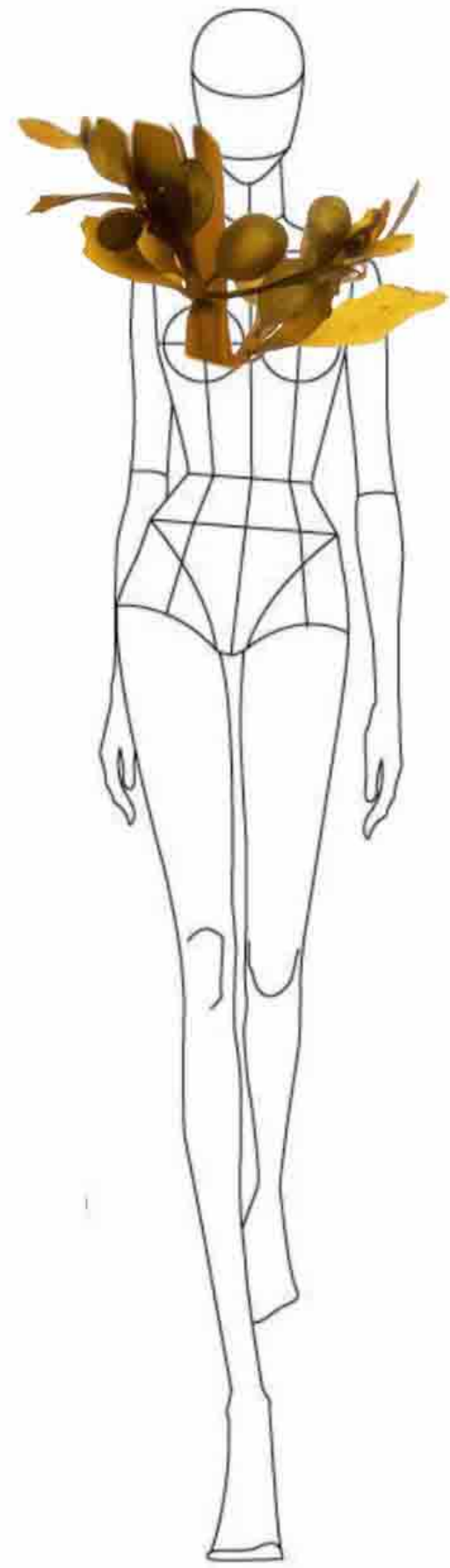
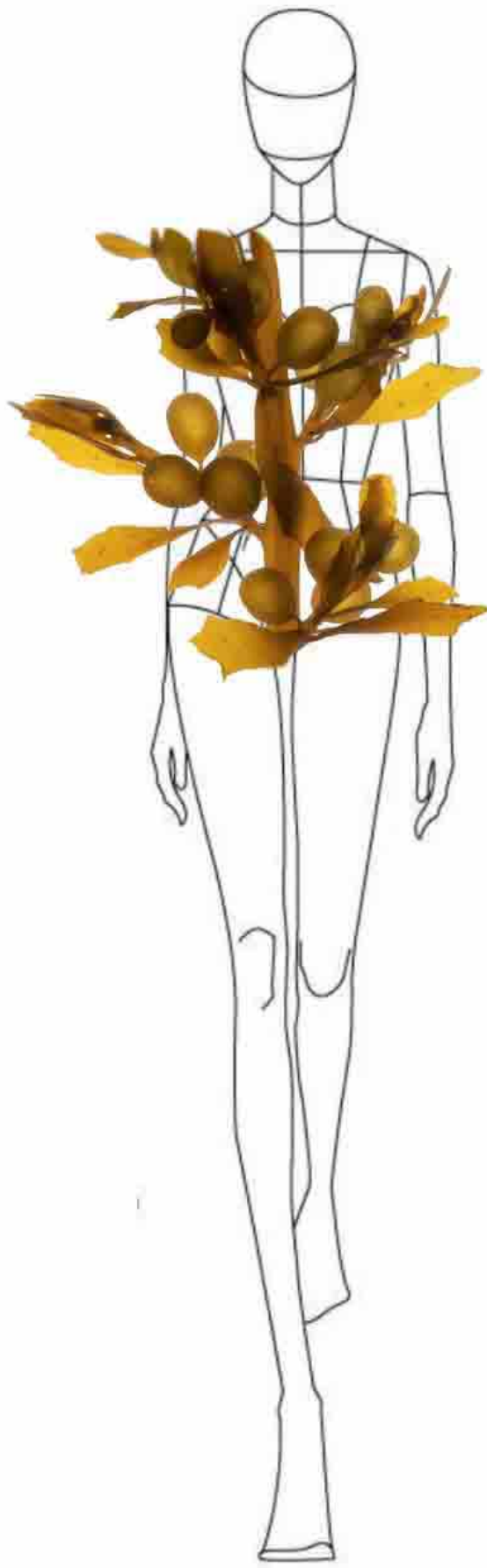


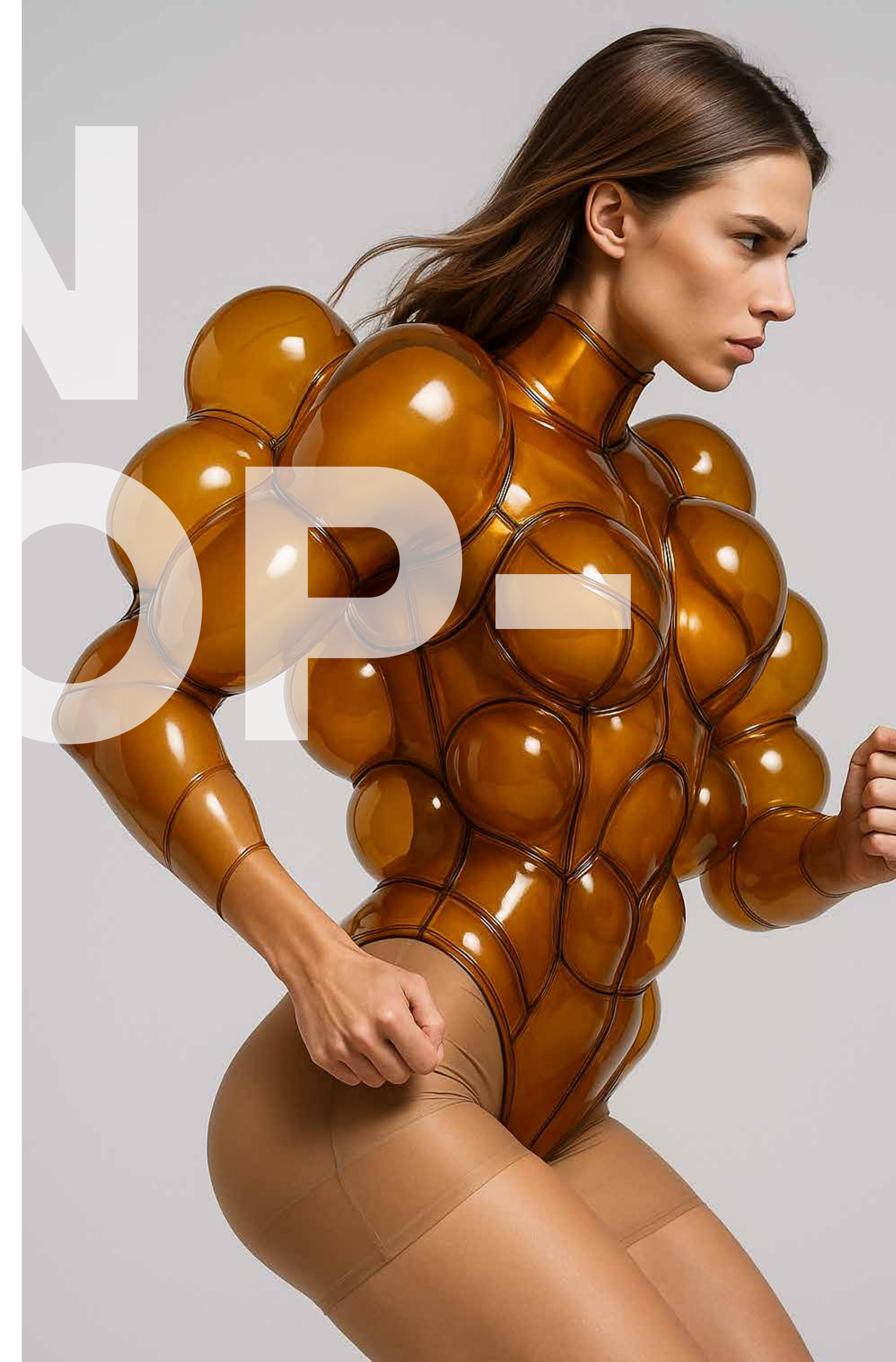
DESIGN
INSPIRATIONS

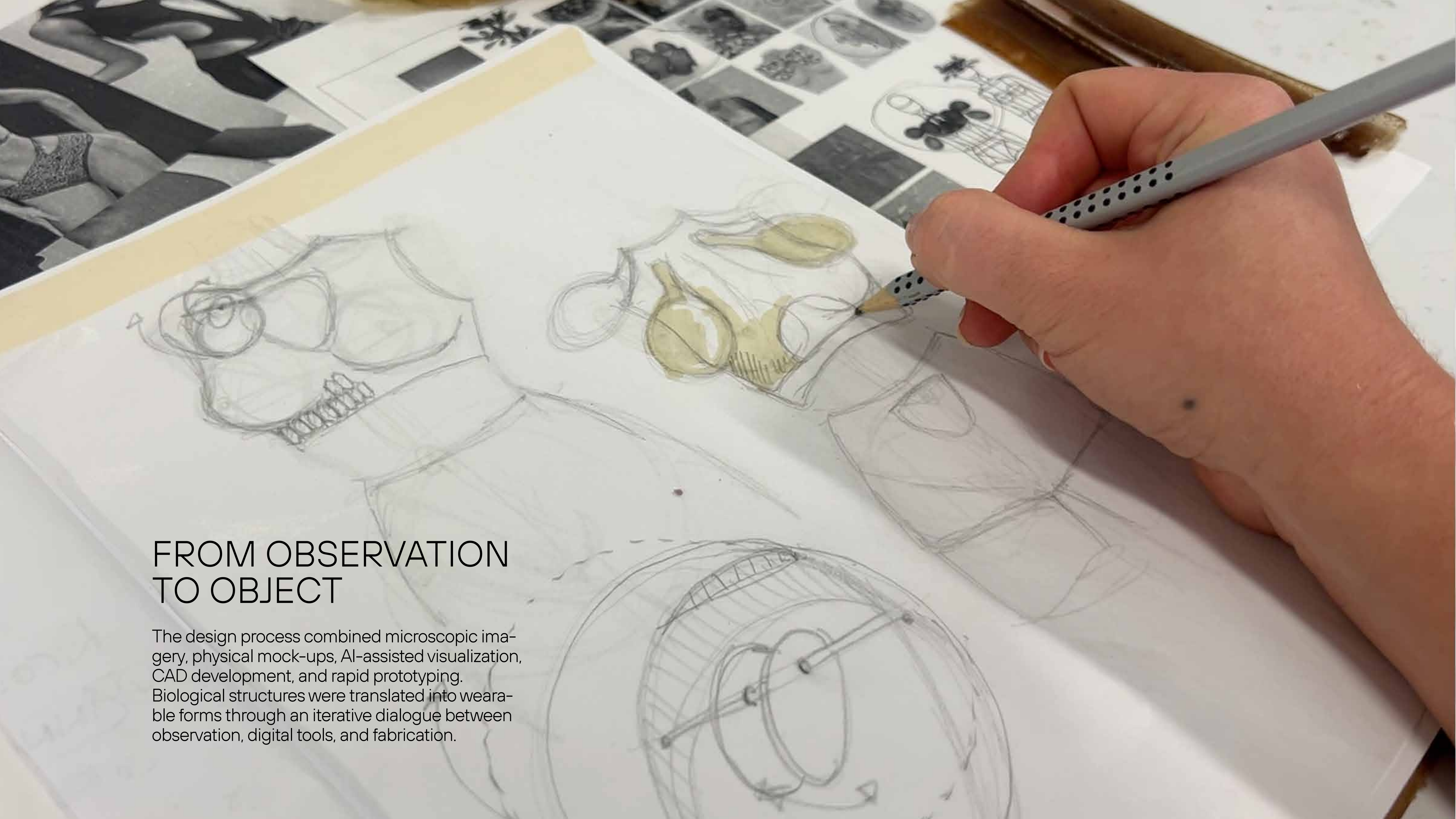


LEARNING FROM SARGASSUM

Sargassum informed the project not only as a material source but also as a formal language. The floating bladders, branching structures, surface textures, and organic growth patterns informed the wearable and eyewear designs. References such as antique glass buoys, marine organisms, and oceanic structures further shaped the aesthetic direction.







FROM OBSERVATION TO OBJECT

The design process combined microscopic imagery, physical mock-ups, AI-assisted visualization, CAD development, and rapid prototyping. Biological structures were translated into wearable forms through an iterative dialogue between observation, digital tools, and fabrication.



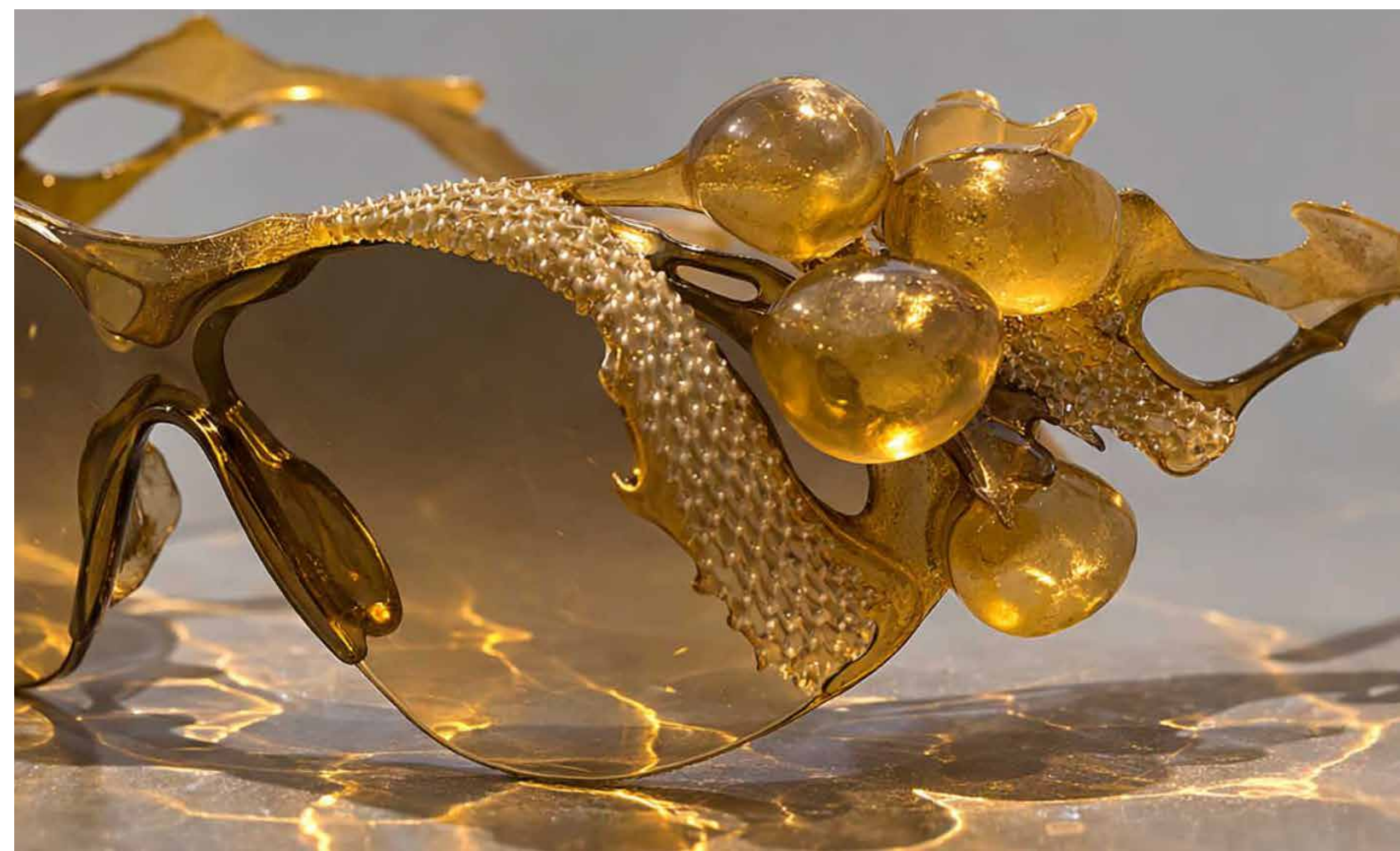
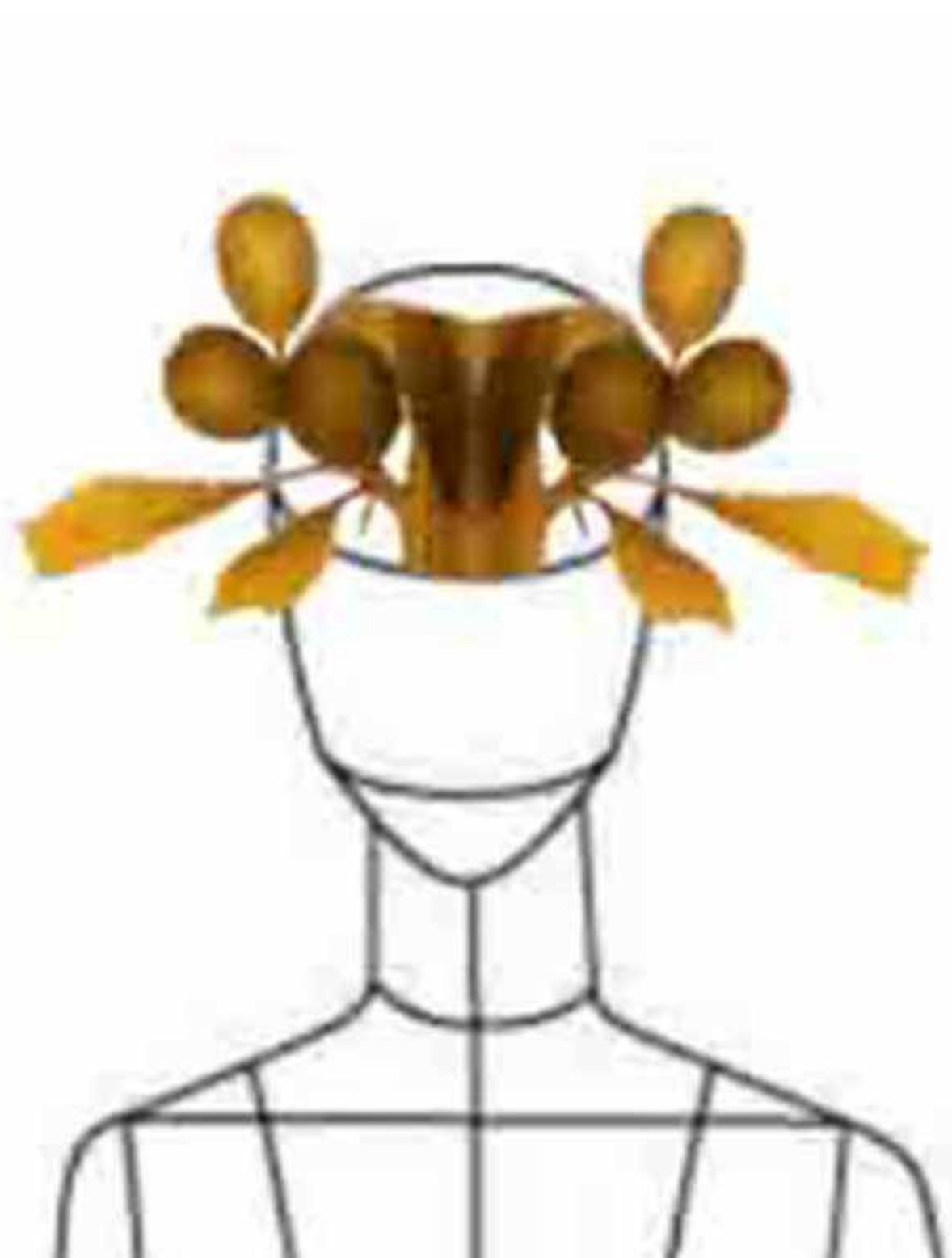


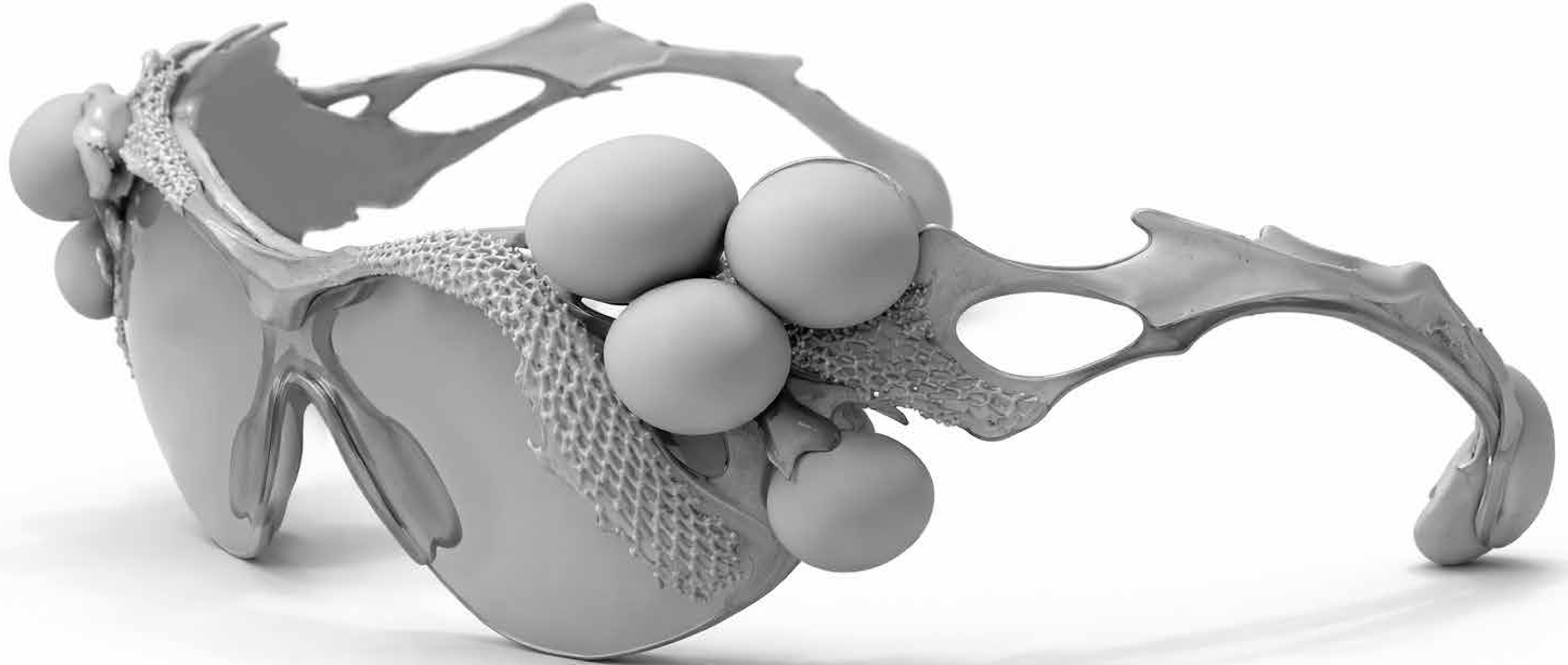
THE GLASSES



SARGASSUM EYEWEAR

The glasses translate the visual language of Sargassum into a wearable object while maintaining the identity of premium eyewear. The enlarged air bladders and textured surfaces became defining design elements.













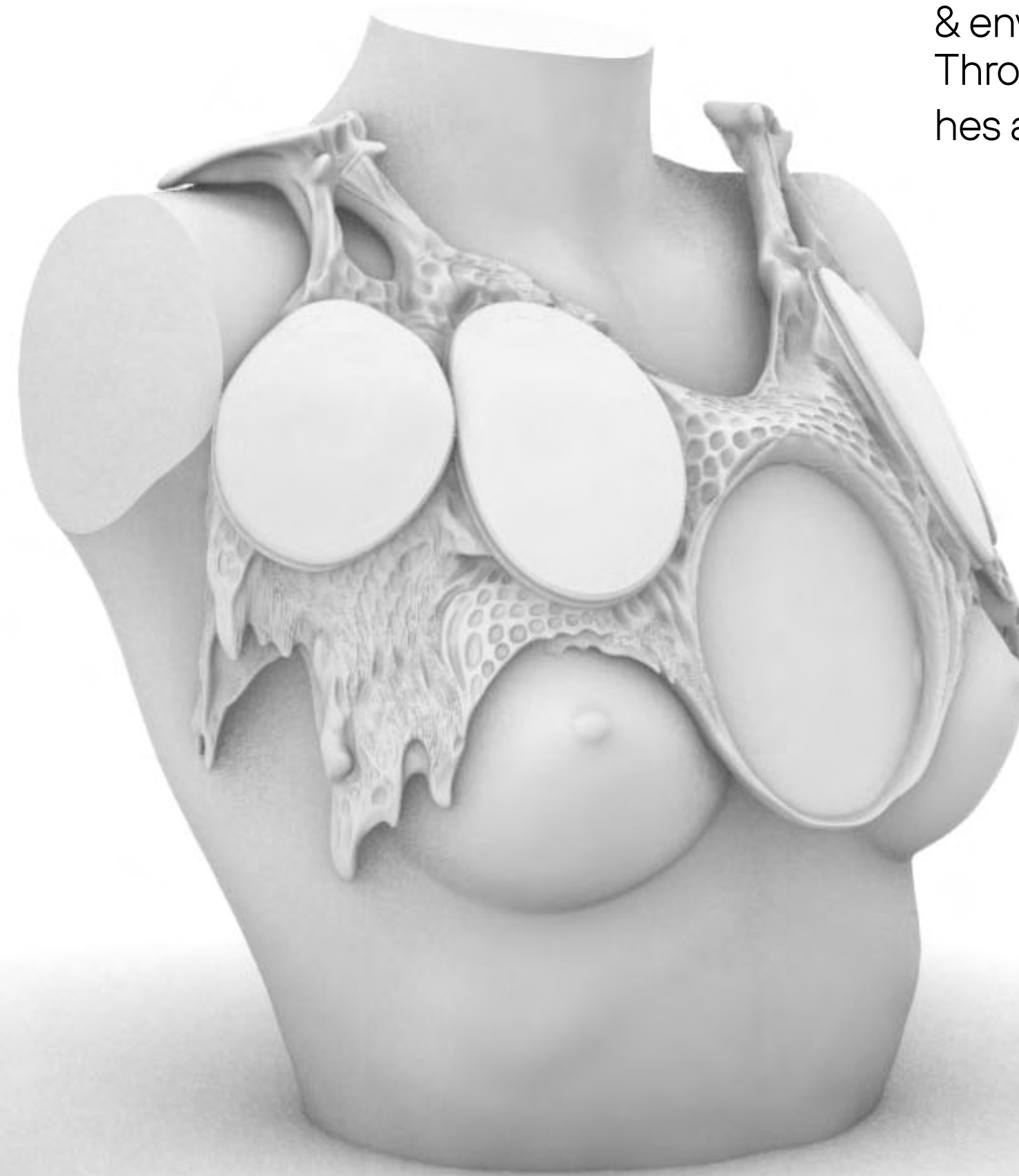
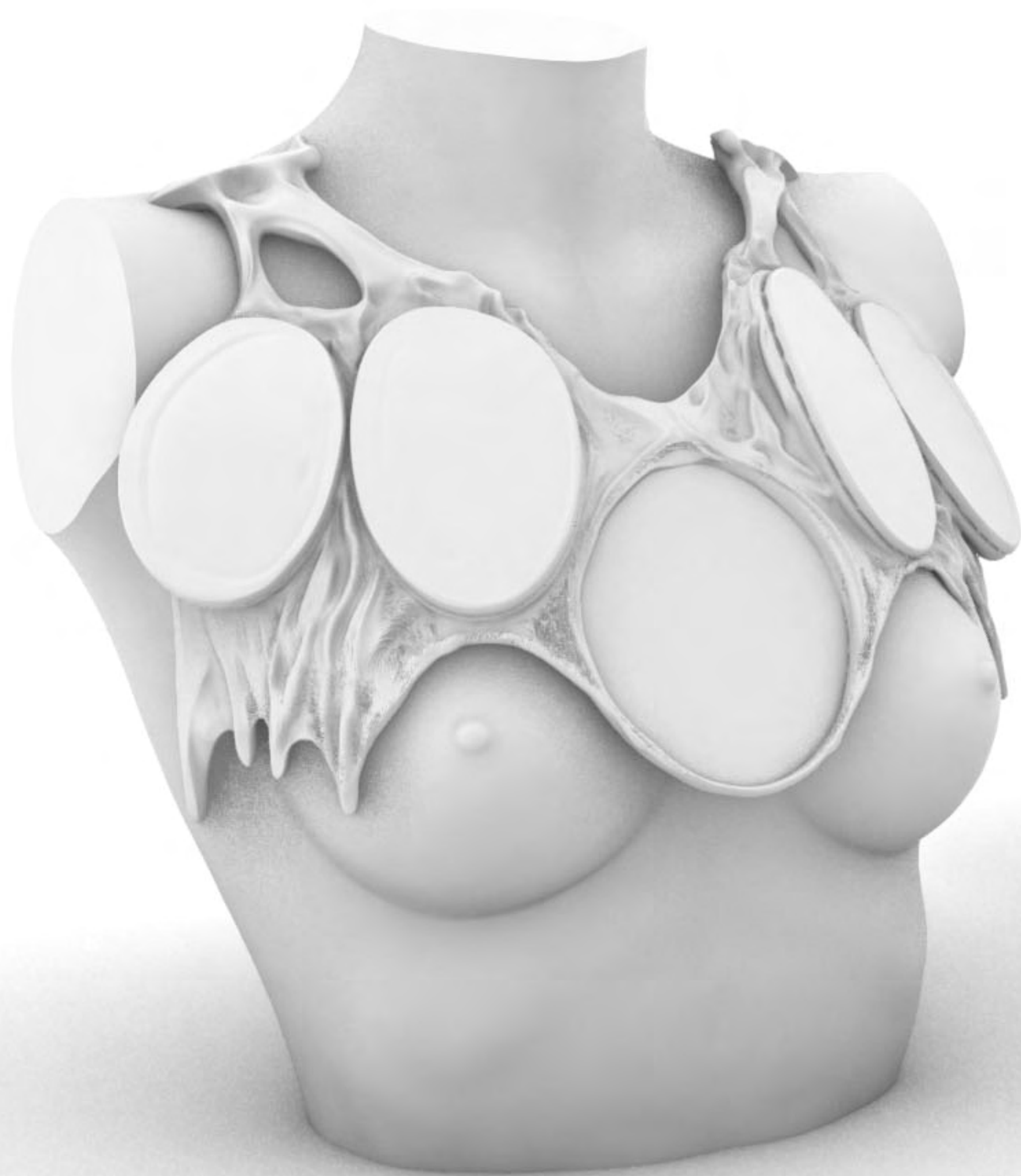


CHEST
PIECE

THE WEARABLE

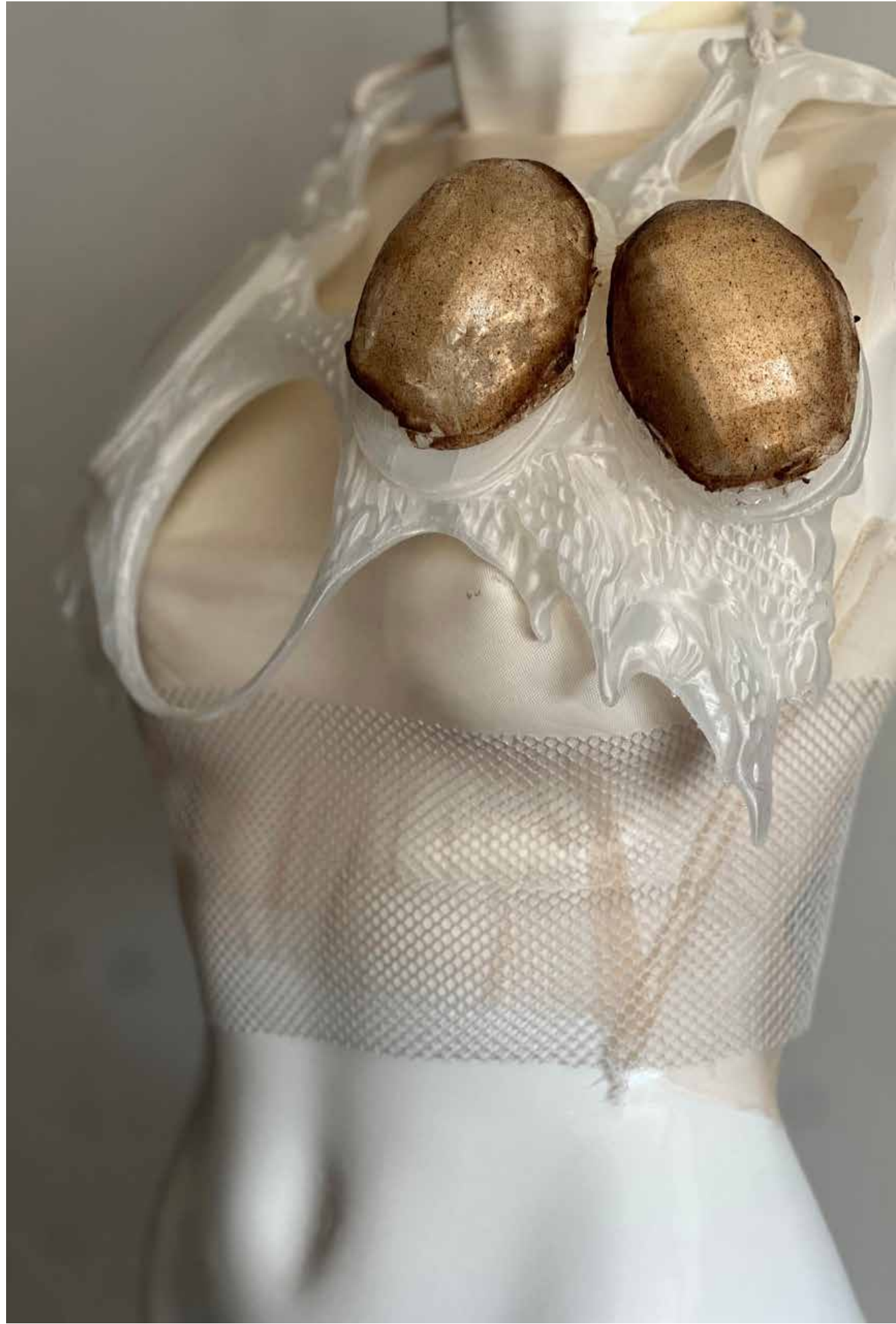
Positioned on the chest, the wearable becomes an interface between body, material, & environment.

Through gentle movement, the object establishes a rhythm to which the wearer begins to adapt.

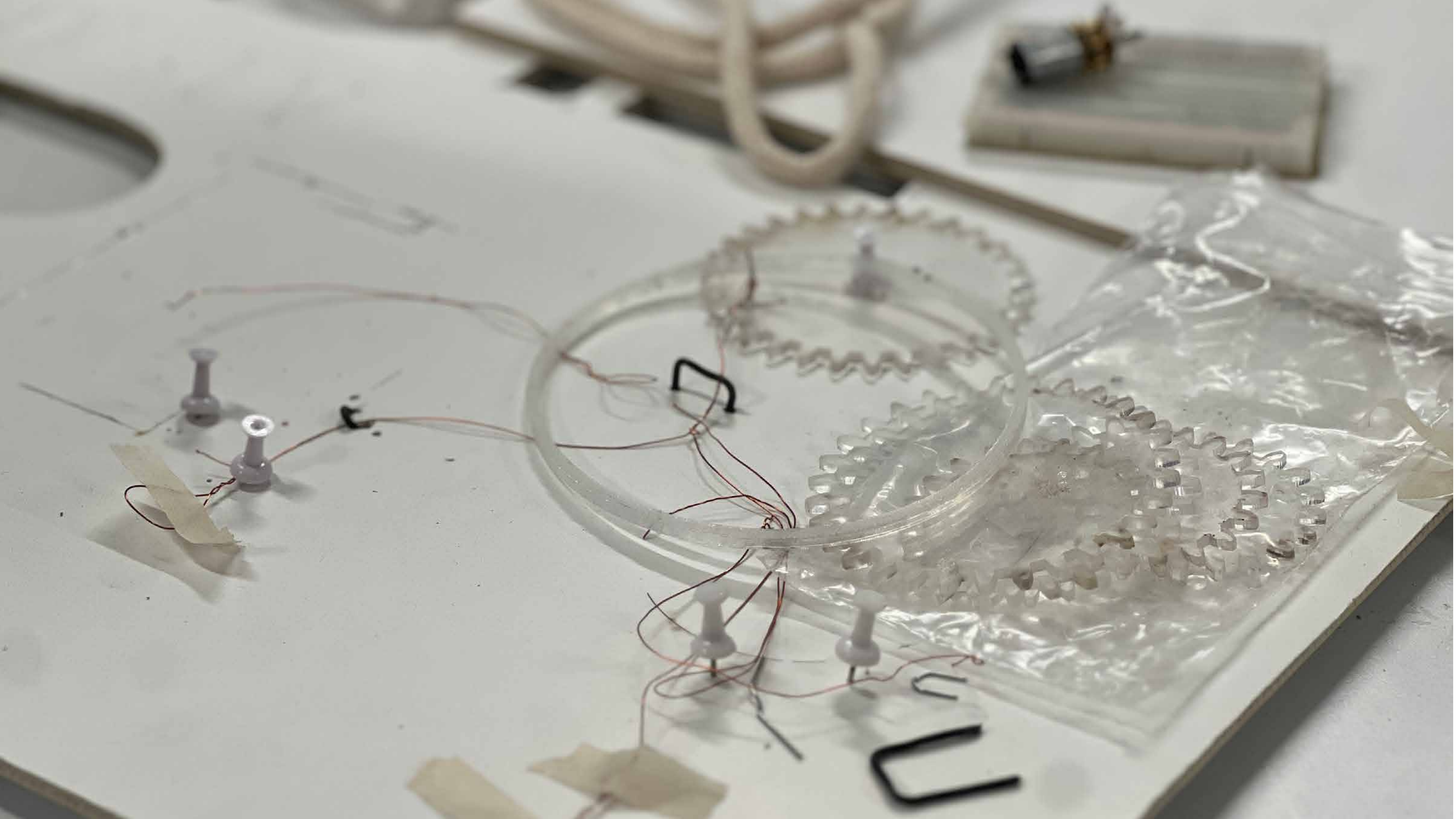




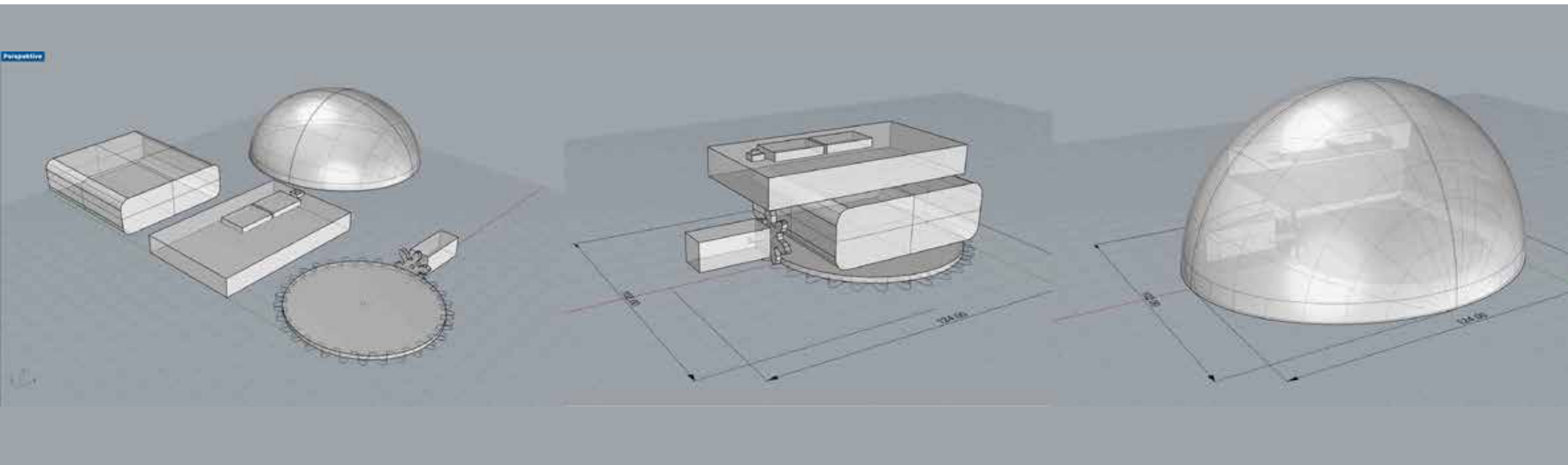
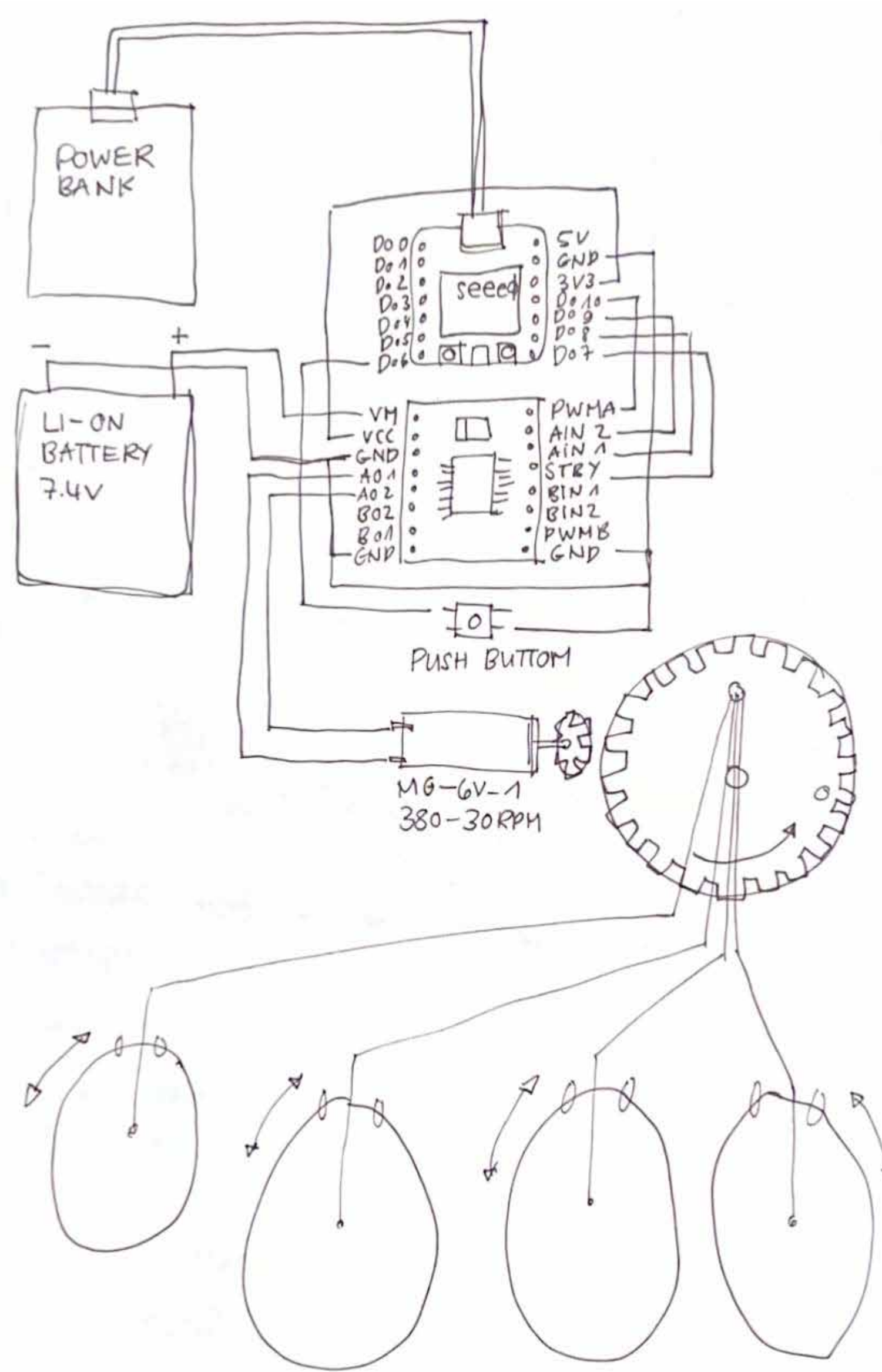
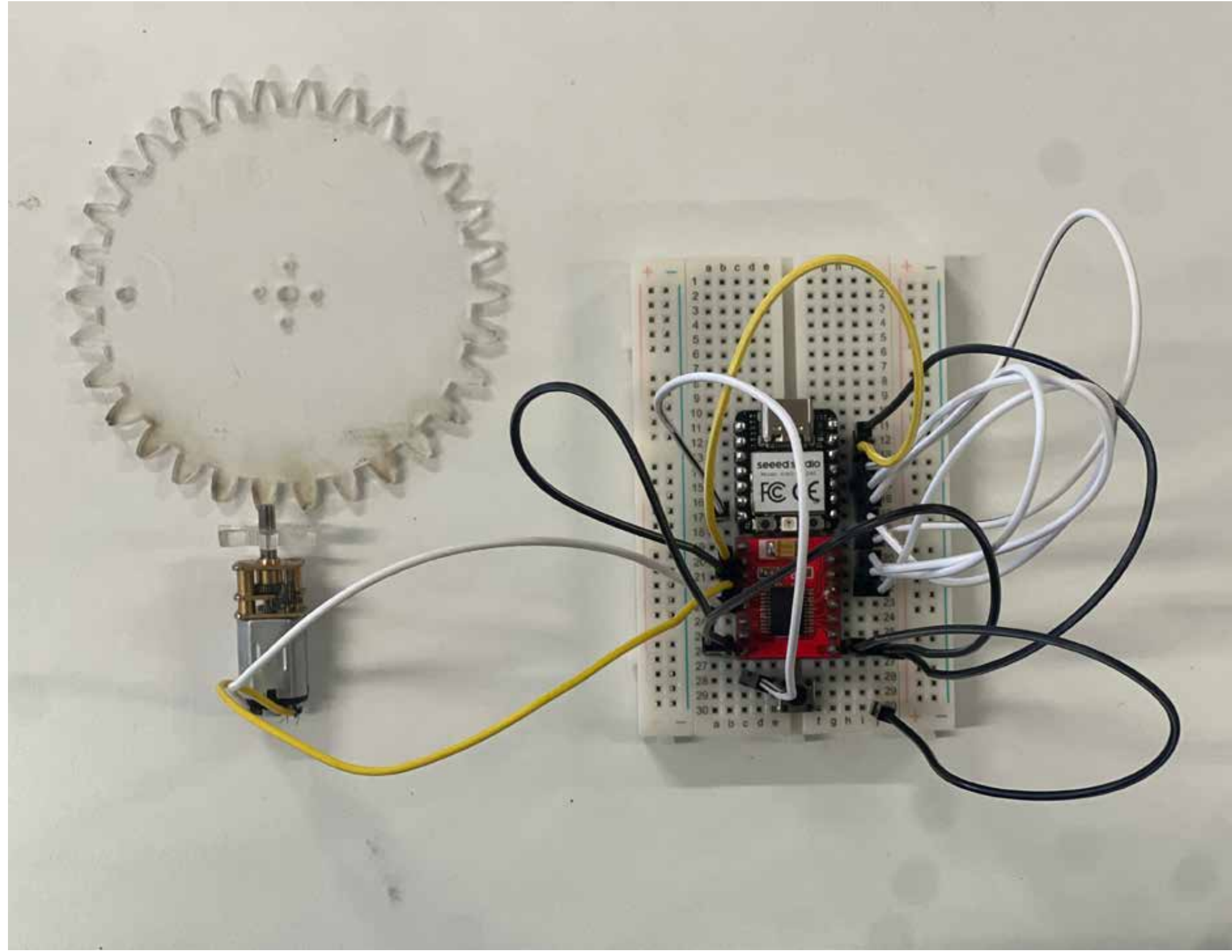








Handwritten markings on the PCB, possibly indicating component values or pin configurations, including the number "1" and a symbol resembling a square wave or a specific component identifier.





HIP PIECE



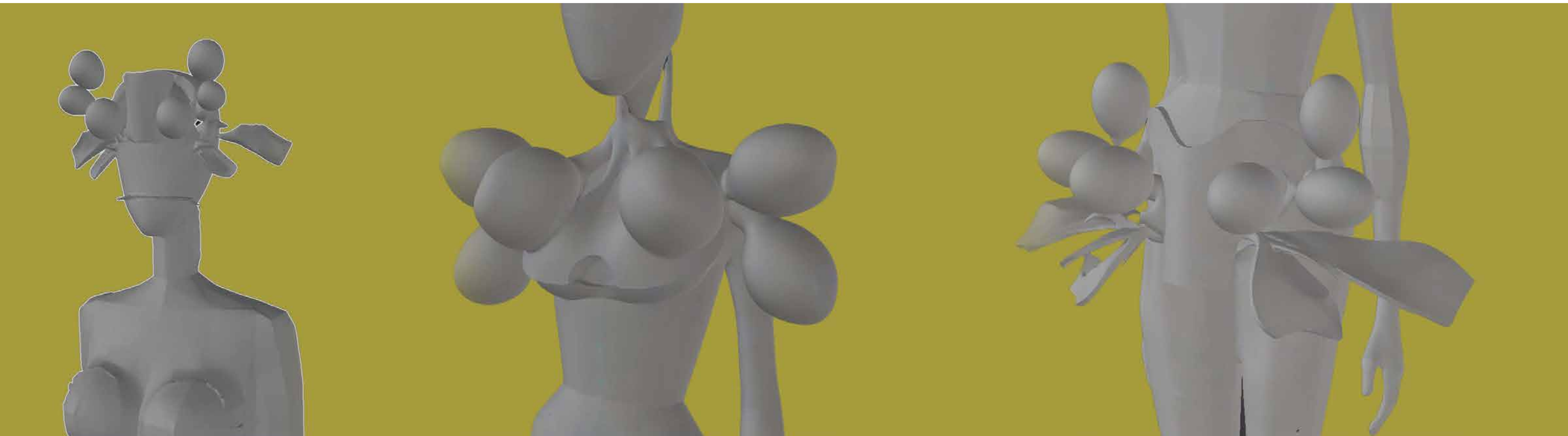


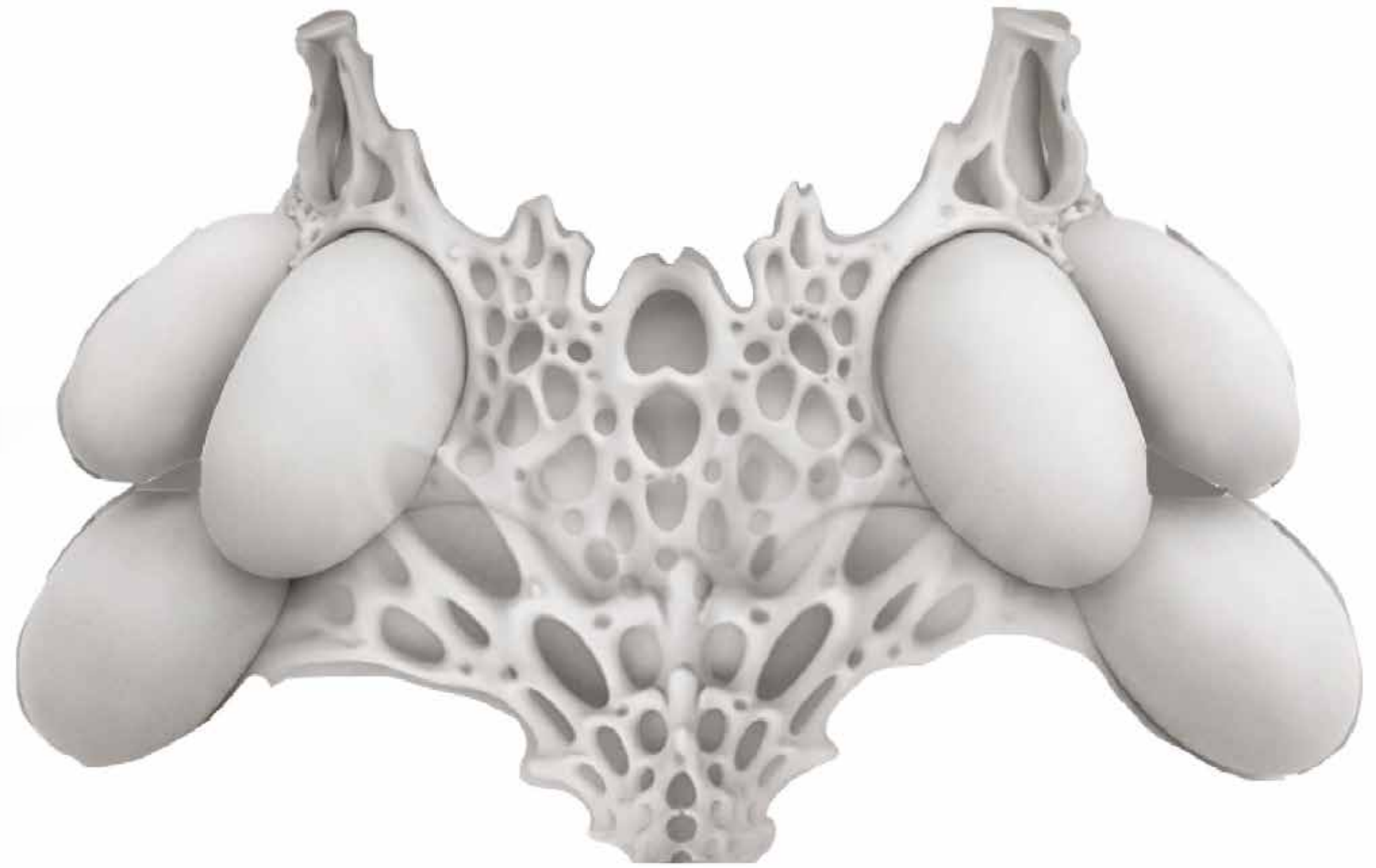
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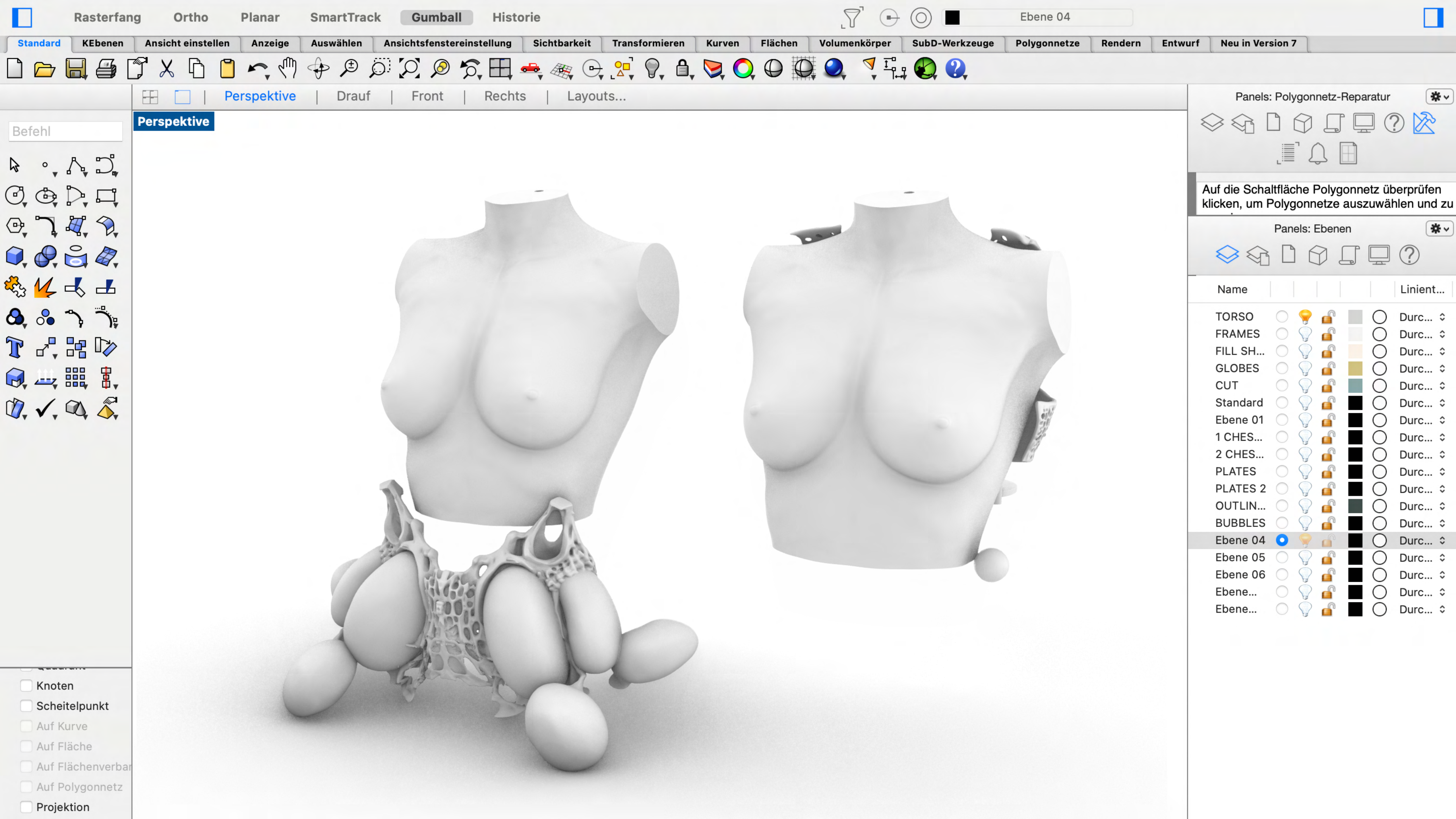


FROM DIGITAL TO PHYSICAL

The final objects were produced through a combination of CAD modeling, 3D printing, electronics integration, & biofabrication techniques.







Perspektive | Drauf | Front | Rechts | Layouts...

Panels: Polygonnetz-Reparatur



Auf die Schaltfläche Polygonnetz überprüfen klicken, um Polygonnetze auszuwählen und zu

Panels: Ebenen



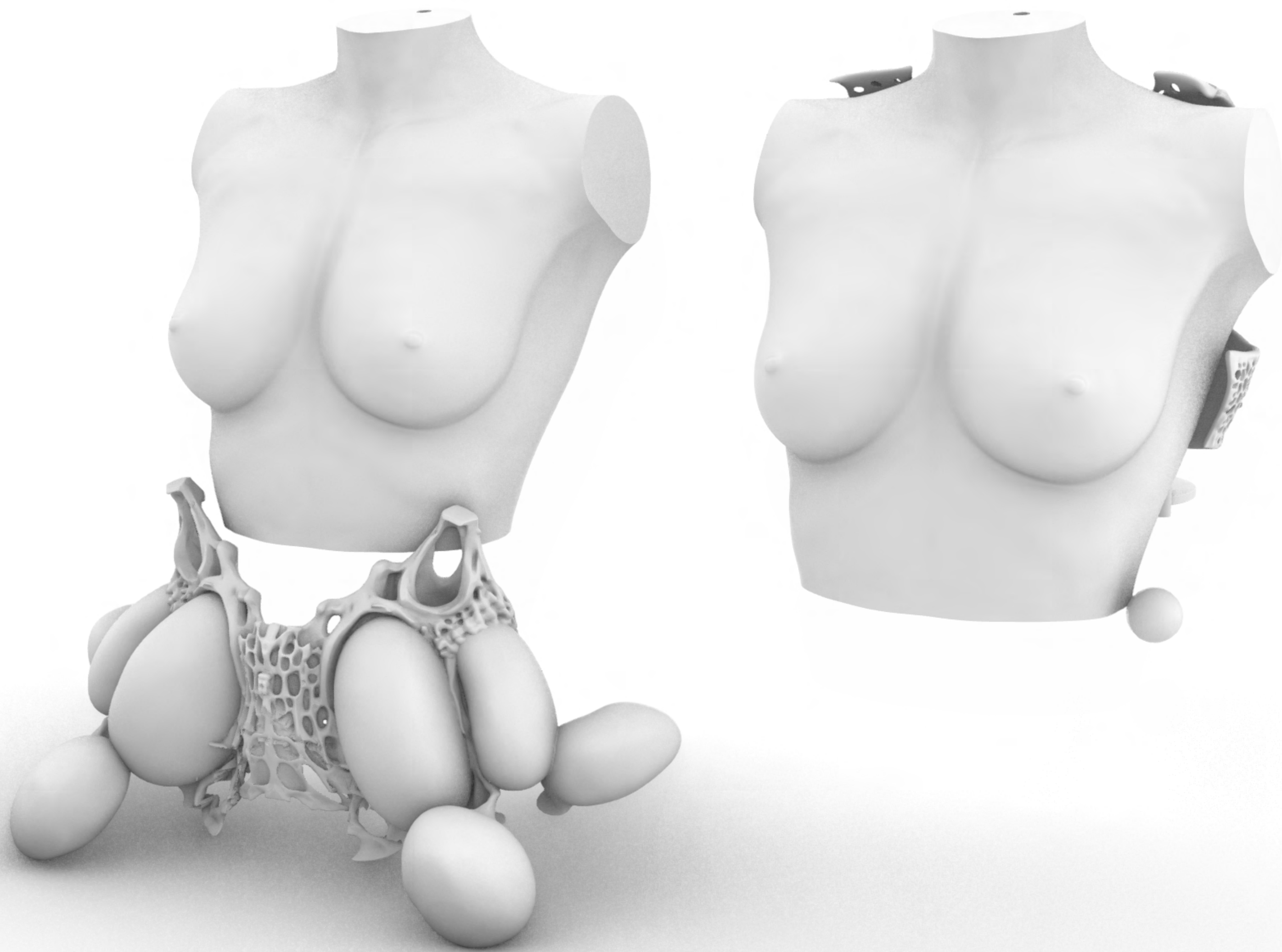
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Befehl



- Knoten
- Scheitelpunkt
- Auf Kurve
- Auf Fläche
- Auf Flächenverbar
- Auf Polygonnetz
- Projektion



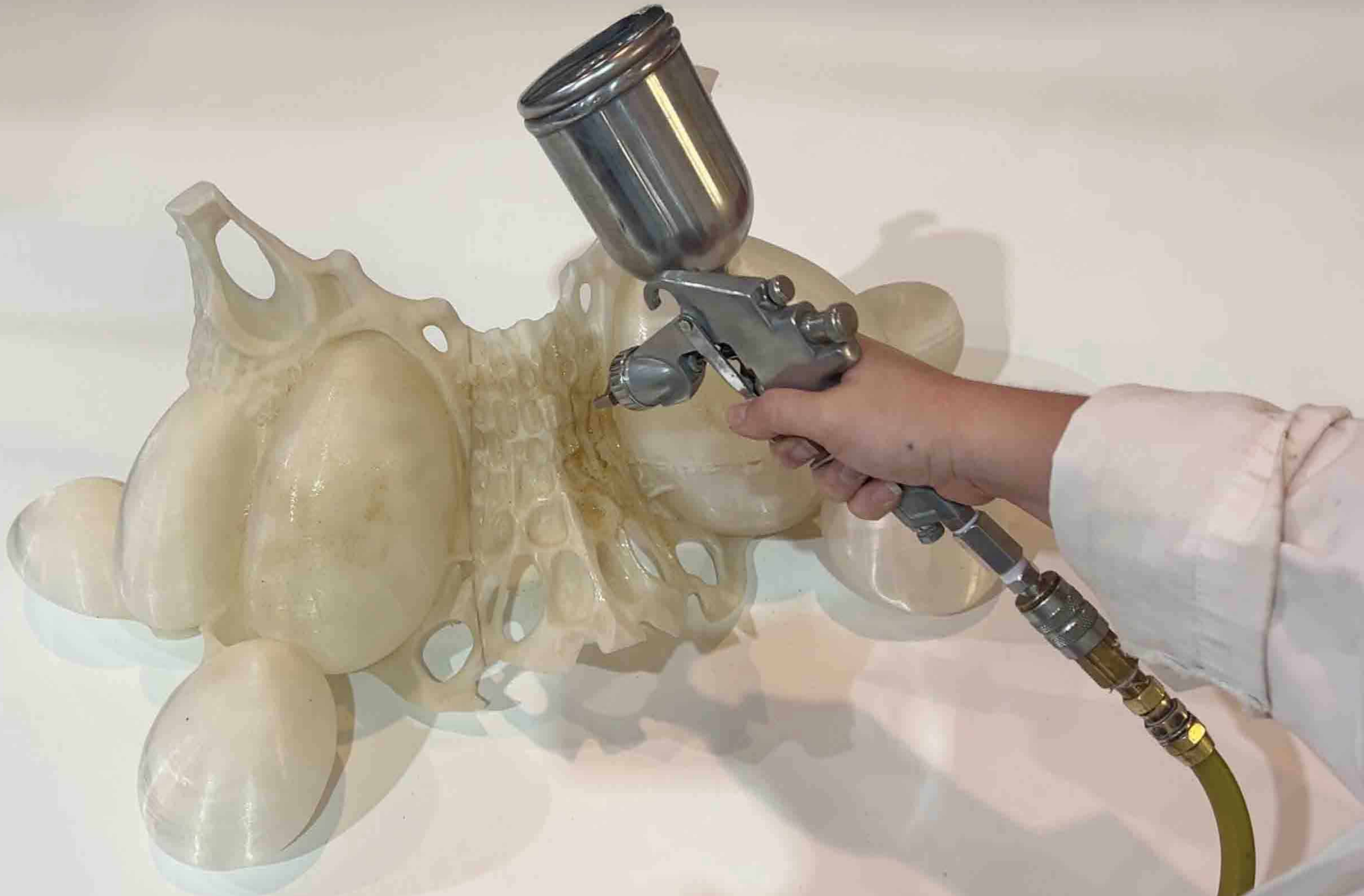
ORIGINAL
PRUSA XL













Campana de Flujo Laminar





FINAL

OUT

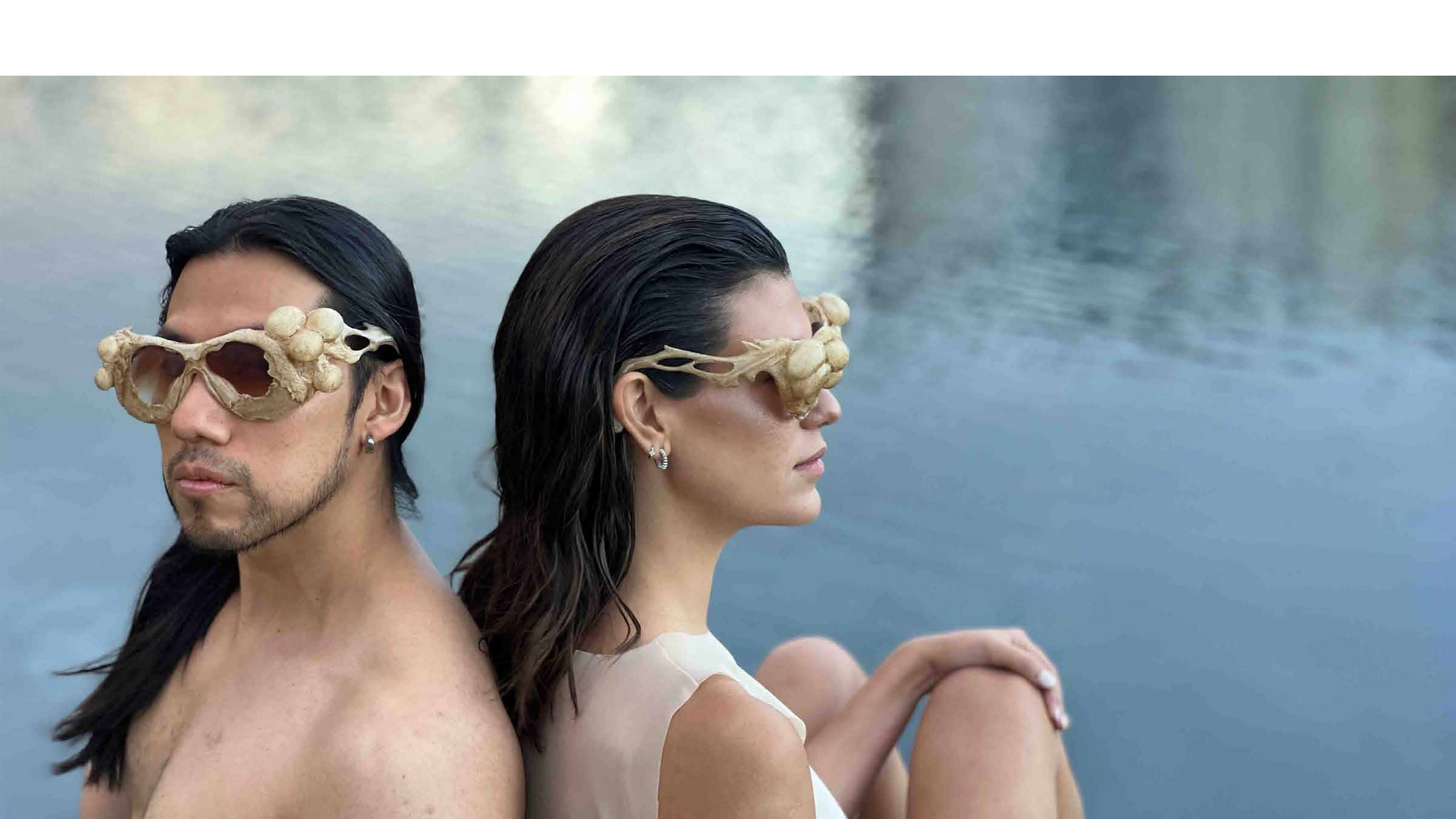
COME

























REFLECTION

WHAT I LEARNED

Ocean Breath shifted from a project about interaction toward a project about attunement. Rather than asking how technology can respond to us, it asks how we might learn to listen, adapt, & coexist with living systems.

Sargassum became more than a material. It became a lens through which to reconsider our relationship with ecological imbalance, environmental excess, & the rhythms that connect us to the ocean.

CREDITS & REFERENCES

SELECTED REFERENCES

NASA – A Massive Seaweed Bloom in the Atlantic
FAO – Harnessing Sargassum: Seaweed in the Caribbean
NOAA – Weekly Sargassum Inundation Risk
The Conversation – How a Toxic Seaweed Choking Caribbean Beaches Could Become a Valuable Resource
The Conversation – Stinky Seaweed Is Clogging Caribbean Beaches – But a New Zealand Solution Could Turn It Into Green Power and Fertiliser
The Guardian – The Creeping Threat of the Great Atlantic Sargassum Belt

IMAGE CREDITS

All photographs, microscope images, material studies, design visualizations, renderings, and project documentation were created by Laura Muth unless otherwise stated.

Pages 10: The Guardian, The Creeping Threat of the Great Atlantic Sargassum Belt.

Pages 11: Seaweed.ie, Sargassum.

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Sometimes
it only takes a light touch
to remind us
how fragile our systems are.