AURA

Fall Semester 21 | Designing Object Experience
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LIGHT AS
MATTER

Reference I

USA (Nina & Samuel) | 100 Years of Beauty - Ep 29 | Cut (https://www.youtube.com/watch?v=DQqmnFMgY4s)

One of the first researches conducted was on the word sexy and on beauty standards. We struggled greatly with the term since we did not want to adhere to a standard of sexy at current time, nor revive an old one. In addition, we wanted to understand the word sexy in a more inclusive way. The video „100 years of beauty - Ep 29" by Cut sums up very well, that beauty standards and with it what is considered sexy changes very drastically over the course of just a decade.
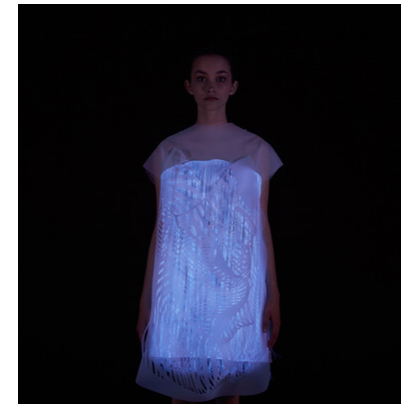
A quote that followed us throughout the project and inspired us was „Do remember: your sexiness is about how you feel, not how you look" by author and family therapist Dossie Easton.

Reference II + III

Regarding fabrics and light, we stumbled across designer Ying Gao and her interactive dresses. We were especially intrigued by how the dresses reacted to movement, or the lack thereof.

Another inspiration, especially interesting regardung a newer material to light up our wearable, were the Light Muses by sanostra-shows.com, that wear dresses with electro-luminescent wires on them, that light up during their dance performances.

Image: View on all materials used,
as seen at the exhibition.

Materials

For our wearable, we did material research on the two main topics lighting and fabrics.

We agreed to design the wearable from a mix of fabrics and forms, consisting in our final product of a toga-like dress and a harness. The toga is made out of elastic polyester with a digiprinted cage pattern. We chose this left-over fabric as the cage represents the feeling many people have towards their sexiness and sexuality, in that many people might feel sexually caged, because of a body that is different from the „general" beauty standards. In addition it is a very lively and flowing pattern that highlights motion when lit up, yet seems quite simple when looked at from afar.

One of the toga's sleeves is made of mesh as to create a special feeling of coveredness while still feeling the air brush one's skin. This creates a very interesting contrast to the left arm, that is not covered at all.

The harness is made out of lashing strap, a material used in lifting heavy things at construction sites and production halls.

Every material used in our wearable is recycled and it is made in a Zero Waste technique, meaning no waste fabric was produced in the process of making harness, sleeve and toga.

For lighting the dress we looked into two main categories, glass fibres and electroluminescent wires. After consulting the Materialarchiv in Winterthur, we discovered that we would have to use very high voltages and therefore decided against electroluminescent wire. The glass fibre limited us in a sense, that the main concentration of light is at the end of the fibre. During our research we stumbled across a silicone wire at ZHdK's physical computing lab. The silicone was perfect because, much like electroluminescent wire, it lit up all along the wire.

In our product, we combined these two main fibres with two plexiglass panes on the harness that lit up mainly along the borders and create an interesting effect while in motion.

For the technical aspect and the interaction with the wearable, we integrated a gyro sensor into the mesh sleeve, that tracked movement data with which an Arduino consequently influenced the light to change color. We decided on hues of blue changing to pink and the white with increasing movement.
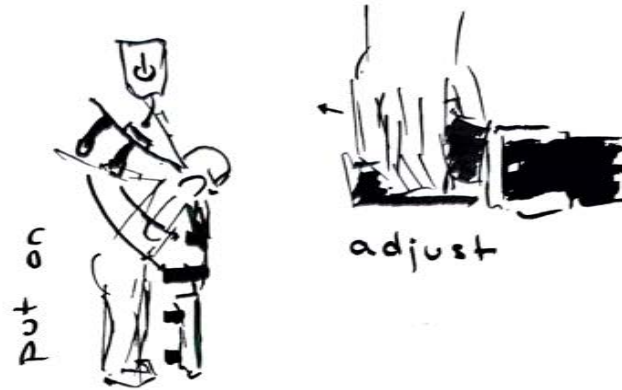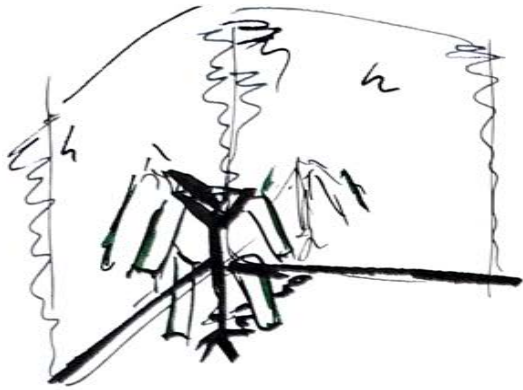
Storyboard / project idea

Image top: moodboard for the word sexy.

Image bottom: Our final product, AURA, worn by Maren Sauer, a student of Contemporary Dance at ZHdK.
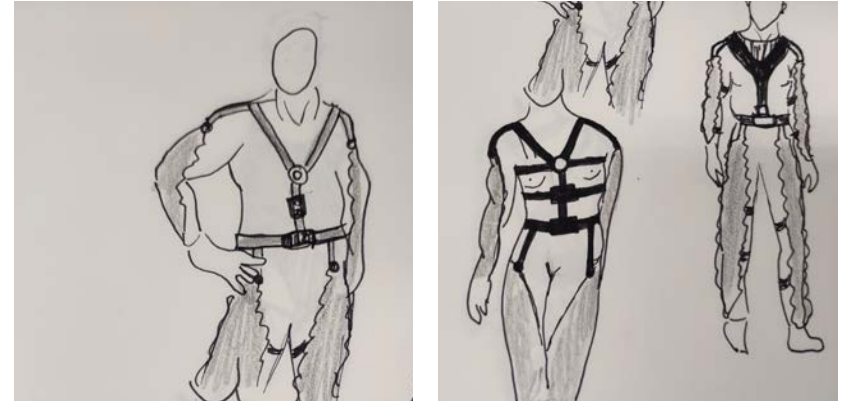

Concept

After thinking about the idea of a sexy dress that lights up, we realized that we especially had our difficulties with the word „sexy".
Since the definition of sexy undergoes constant change, is subjective and mostly very exclusive, we decided, we wanted to design a wearable, adjustable to most body-types. With this we highlight the sexiness of movement and light, rather than limiting sexiness to a specific definition tied to external factors, such as body type.
With silicone thread and glass fibers, sown to a straight-cut dress, a mesh sleeve and an adjustable harness, we lit up different parts of the body. To make the light react to movement, we installed a gyro sensor on the right arm and connected it to an Arduino, wich in turn controlled the LEDs.

Prototype

At first, we experimented with leather, since it is often tied to sexiness and beauty in fashion, but realized, that the look and feel of recycled lashing straps played more into our hands.
One of the biggest challenges was to convey a sense of sturdiness and stability while having rather sensible electronics and thin wires running across one's body.
Instead of going for „chaps" as legs (s. image 1 on following page), we decided on a simpler, androgynous and kimono-inspired „dress" with a recycled fabric with Sonja's design on it.

Another challenge was to attatch the glass fibres and silicone wires, we had decided to use, to the dress and the ends to the LEDs. By sewing very tightly, we managed to fasten the fibers to the dress so they didn't move anymore. It worked very well for the more elastic silicone wires, but the glass fibers didn't hold all too well. For attatching the ends to the LEDs, we tried gluing them on directly but the connections kept breaking.
We finally found a solution in laser-cutting a plexiglass-pane with holes with diameters, smaller than the wires in it, so as to stick the wires in until they held tight.

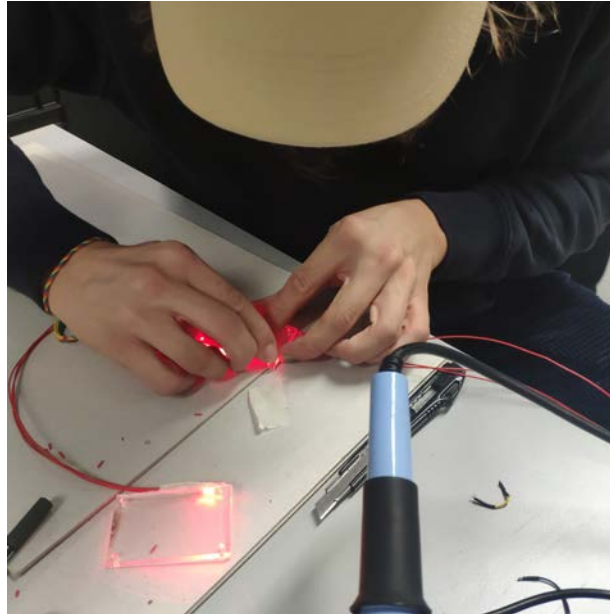*Image 1: Installing LEDs on the two plexi-glass plates for the harness.*

Image 2: Cabling for Arduino and Sensor, plexiglass plate with LEDs and ends of glass and silicone fibers.
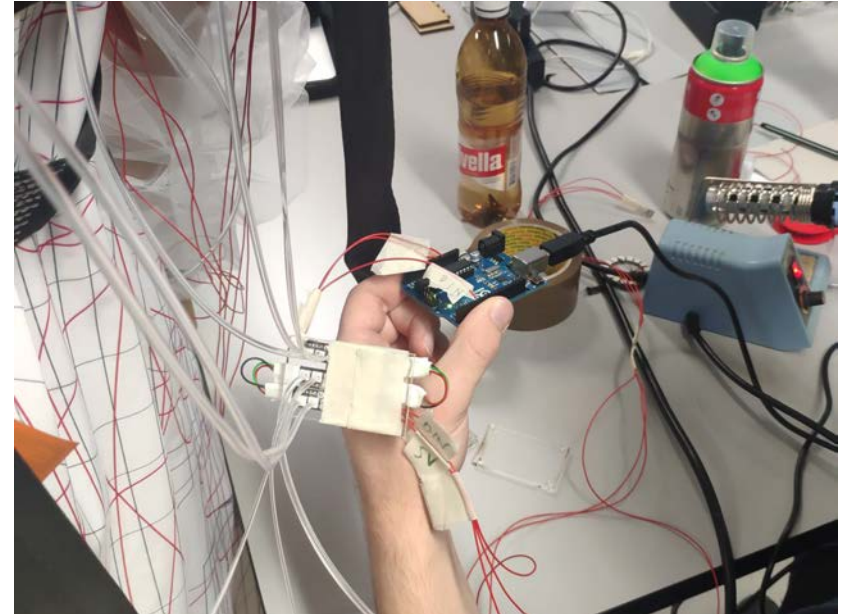
Image 3: First prototype of the wearable with a harness of recycled leather and mesh.

Image 4: Production of the first prototype.

Image top: Adjusting the dress at our final exhibition.

Image bottom: Our final product, worn by Maren Sauer, a student of Contemporary Dance at ZHdK.

Final outcome

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Image 1-4: Impressions from the final exhibition, including our team putting on the dress and three wonderful classmates dancing around.

Sources/credits

page 3:	moodboard:	(in clockwise order)
		https://www.pinterest.ch/pin/709176272580157130/
		https://www.pinterest.ch/pin/824510644275884090/
		https://www.facebook.com/CultofAphroditeVintage/photos/sahary-djeli-in-salome-a-belly-dancer-by-studio-talbot-1920ssahary-djeli-by-dele/671337012895670/
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	image 4:	https://www.sanostra-shows.com/en/premium-acts/light-muses/
page 5:	image	Giovanna Yanireth León Briceno
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