THE INHABITED SKIN
PHOTOBOOK

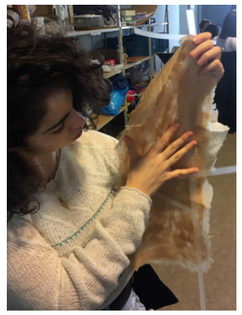
EFRAÏM

Electronics

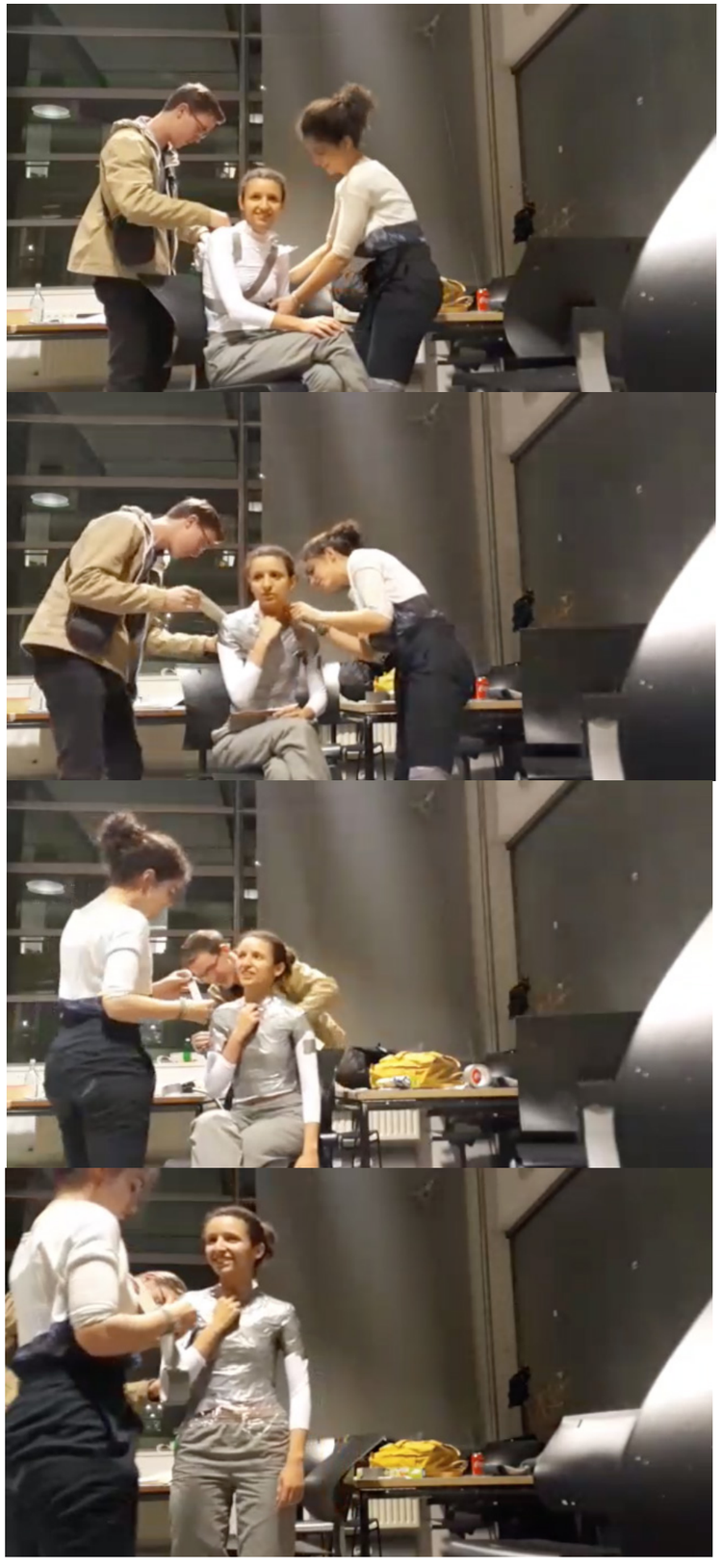
SARAH

Conceptualisation

LÉA



Skin design
Contraption



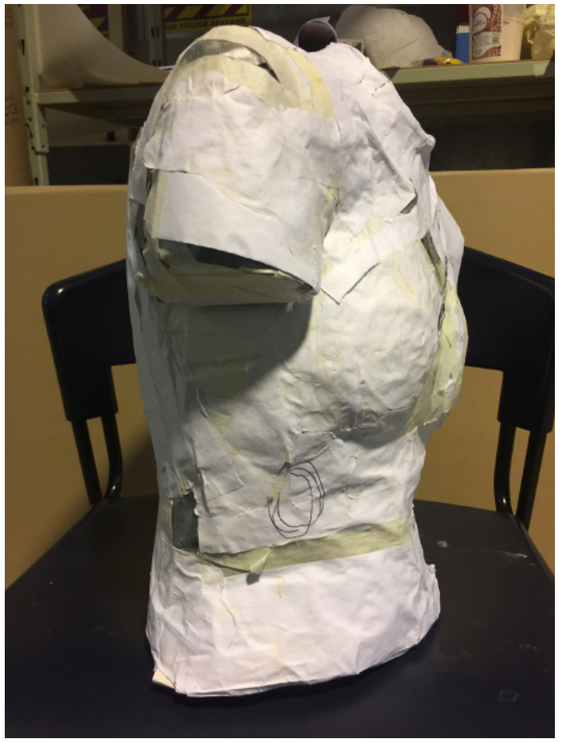
Here we are building a mannequin torso from scrap. It is molded after Sarah's body. This is because we wanted a realistic shape and poise we could have complete creative control over.

The process for this was for one of to wear a super tight thermal shirt so that the others could create an armour with duct tape.

Our project being quite a personal one it seemed only fitting (pun intended) to make it our own.

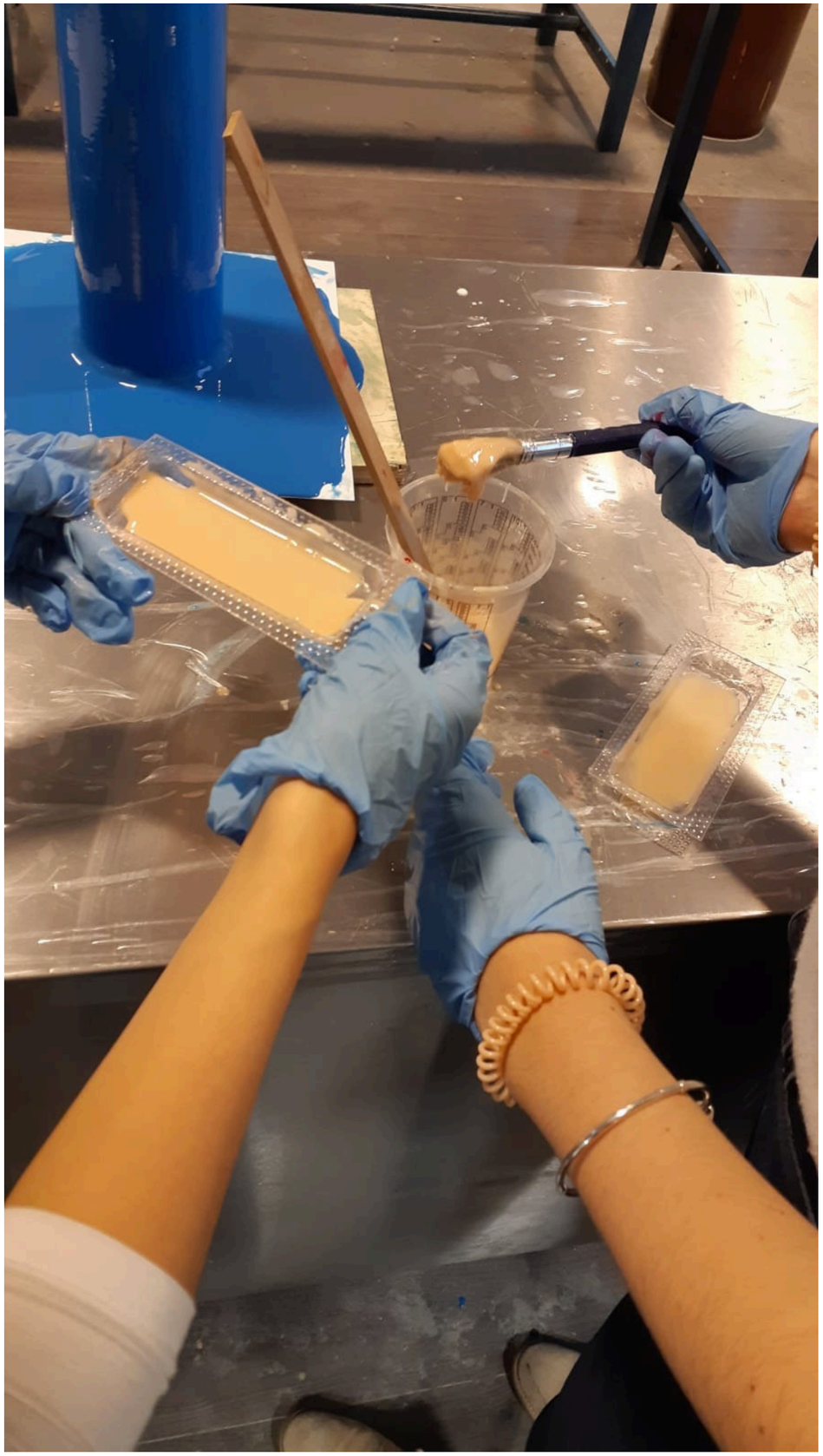
finished torso

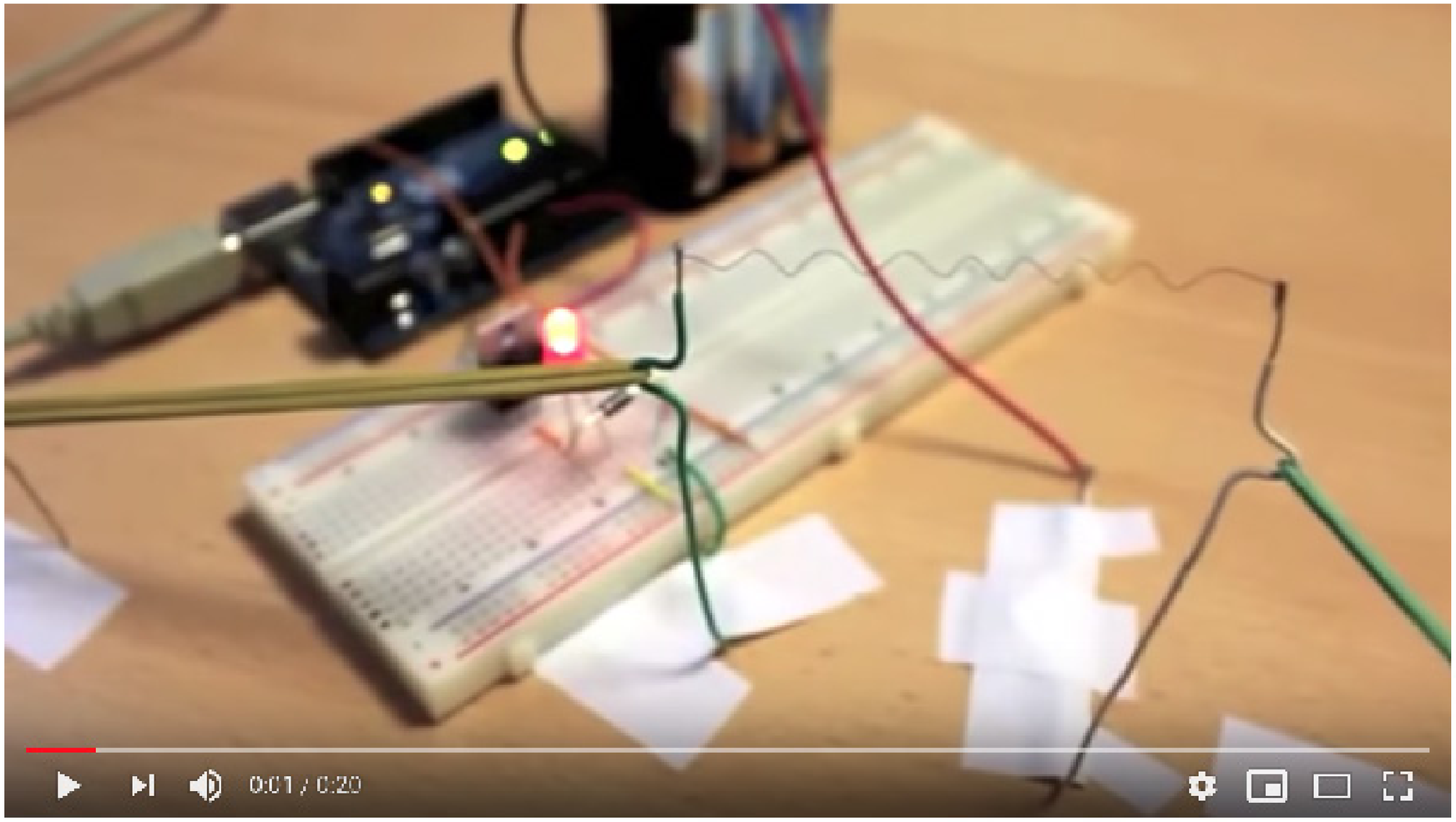
Placement marks for our moving skin are visible.



Change of plans today. Instead of the torso project we initially went for, we changed our mind and went back to the idea of a wearable after a discussion with Eibert and Mila. The choice of the wearable is better because it is thin and in a way you can't really see where the magic happens.

Our first silicon samples. We experimented with different thicknesses in order to find out what was the most skin like.





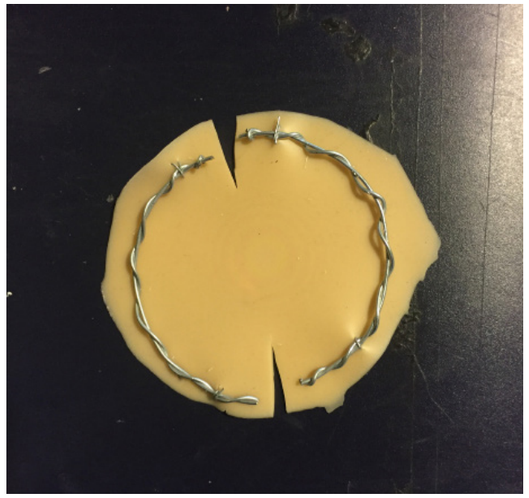
Nitinol + Arduino

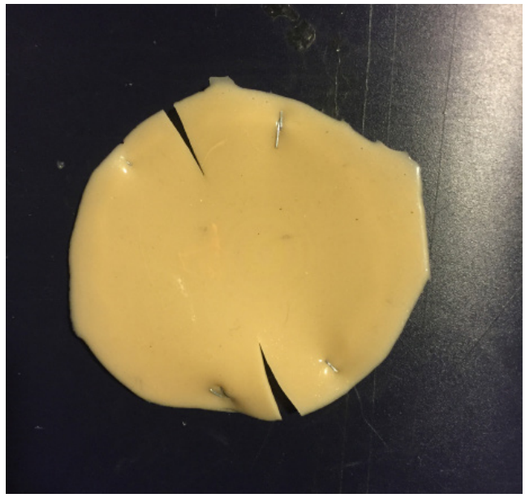
5,287 views

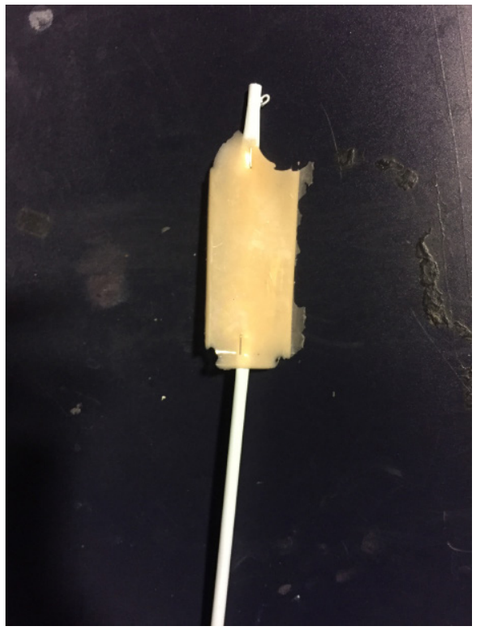
16 0 SHARE SAVE

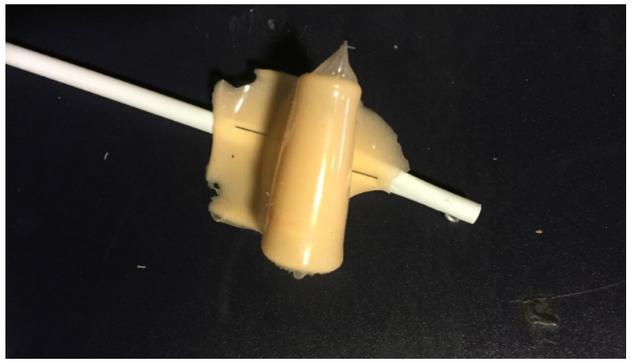
For the wearable to stay thin
Eibert suggested we use flexinol, a thermosensitive wire that retracts with heat. It is true that with such a sensible approach to this project the cervo motor sound might hinder our message.

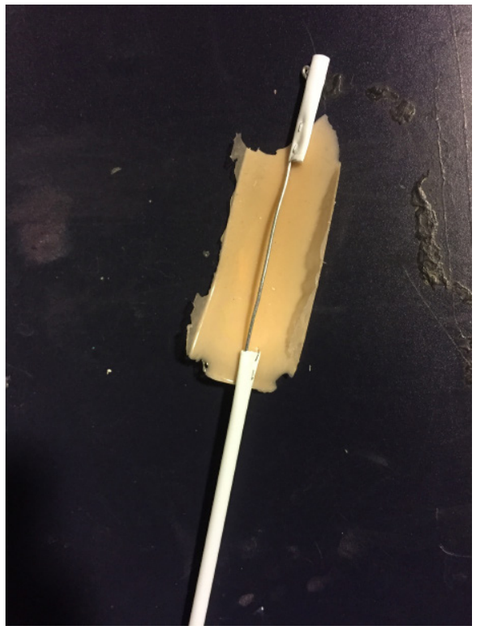
Because we didn't have the flexinol yet we tried out some mechanical ways to animate the silicon.

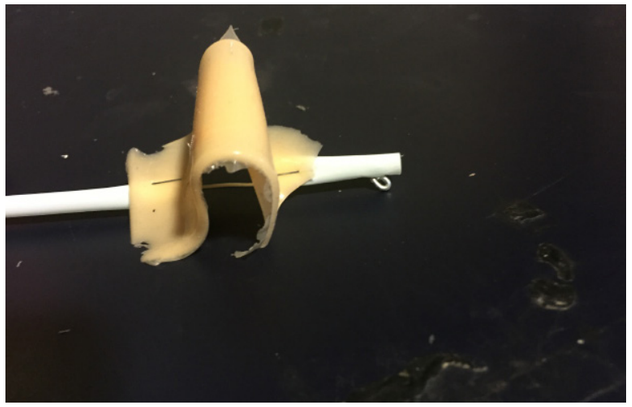


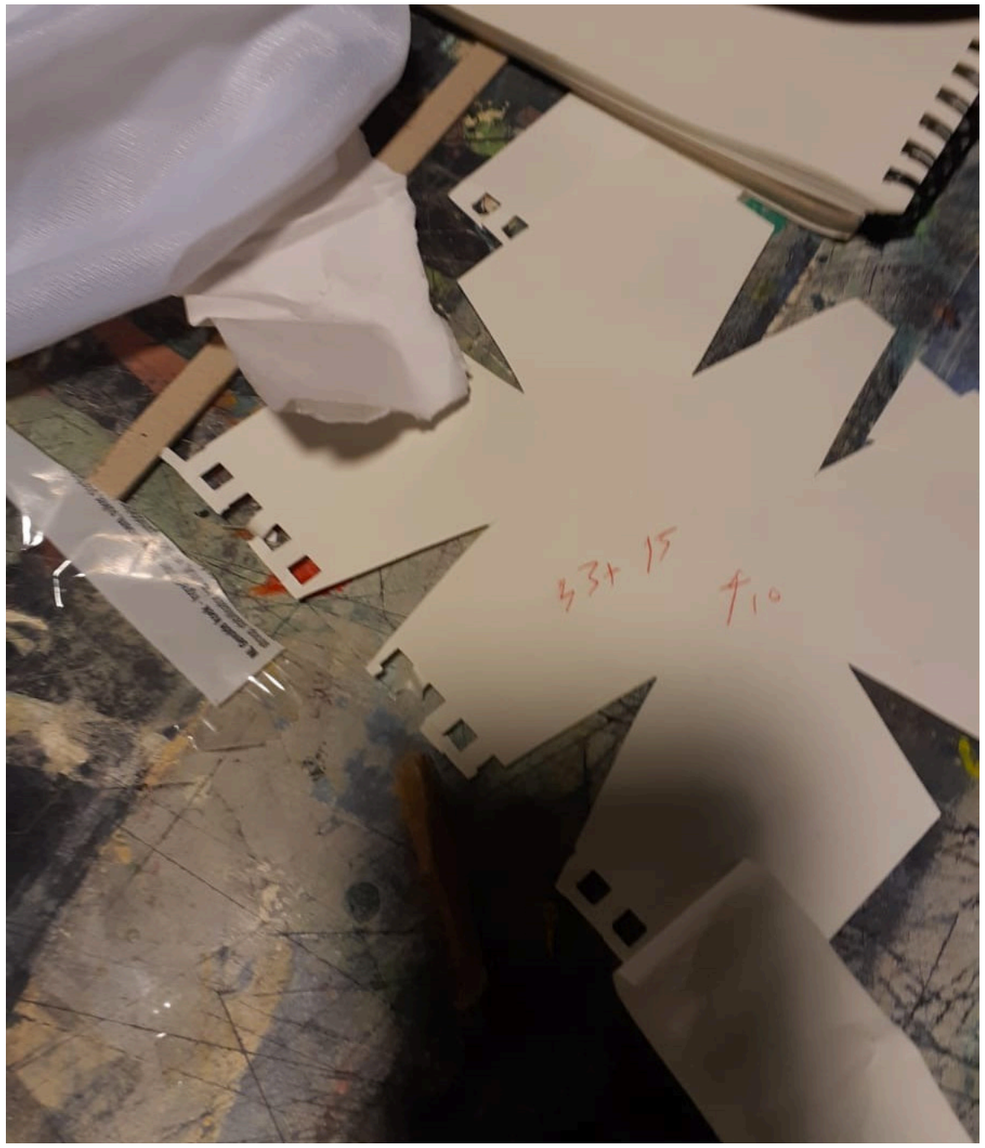


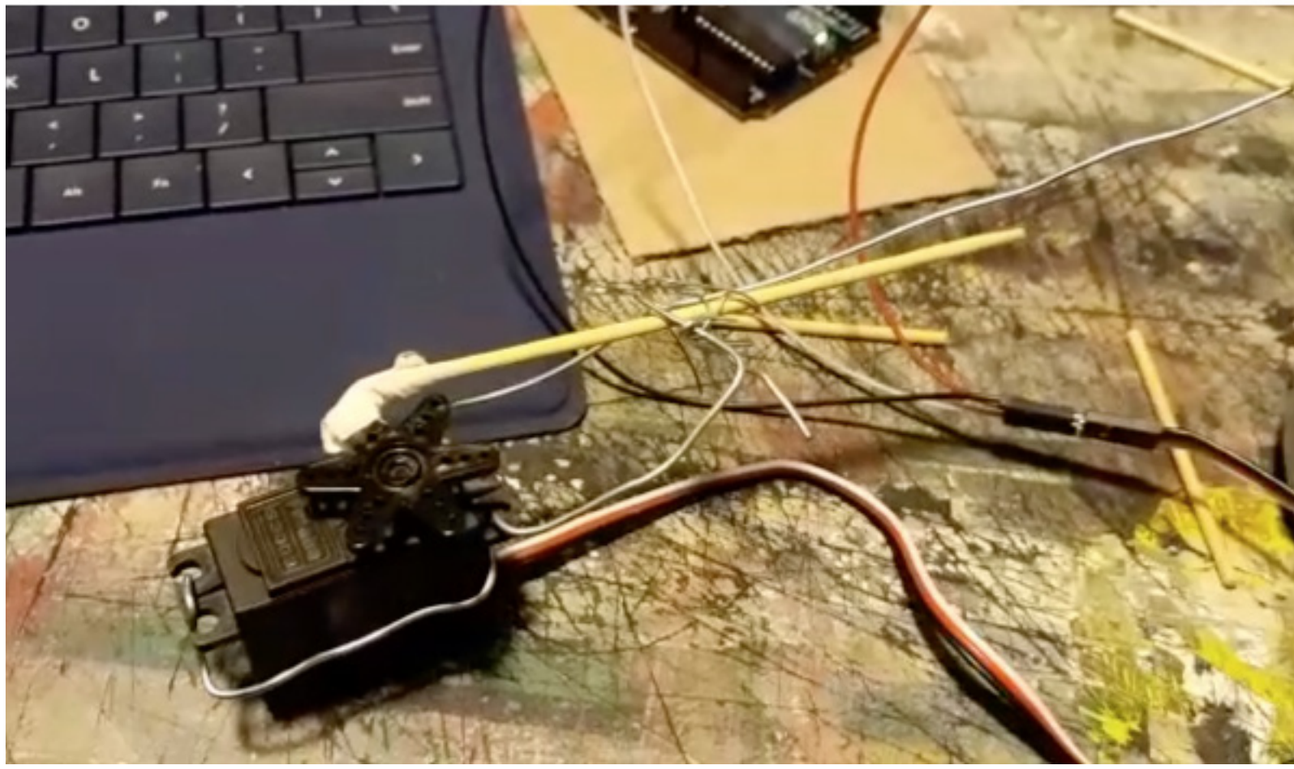




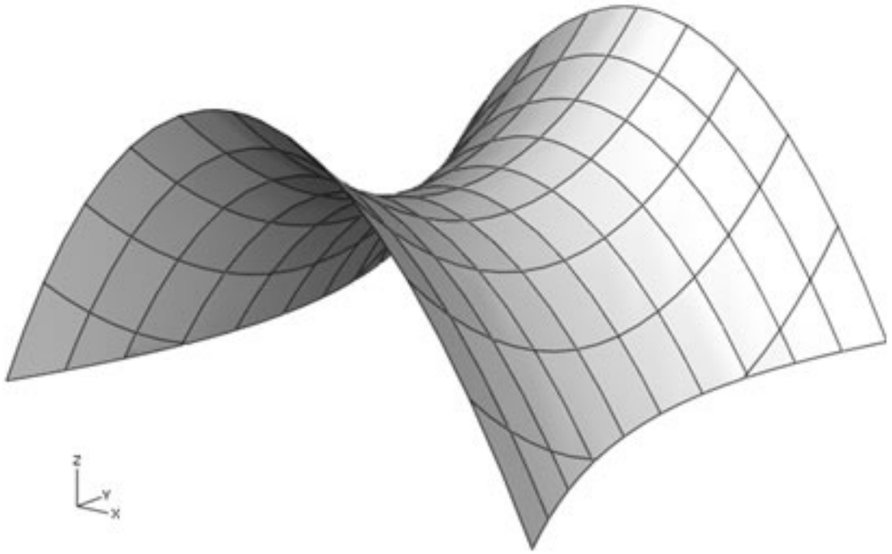






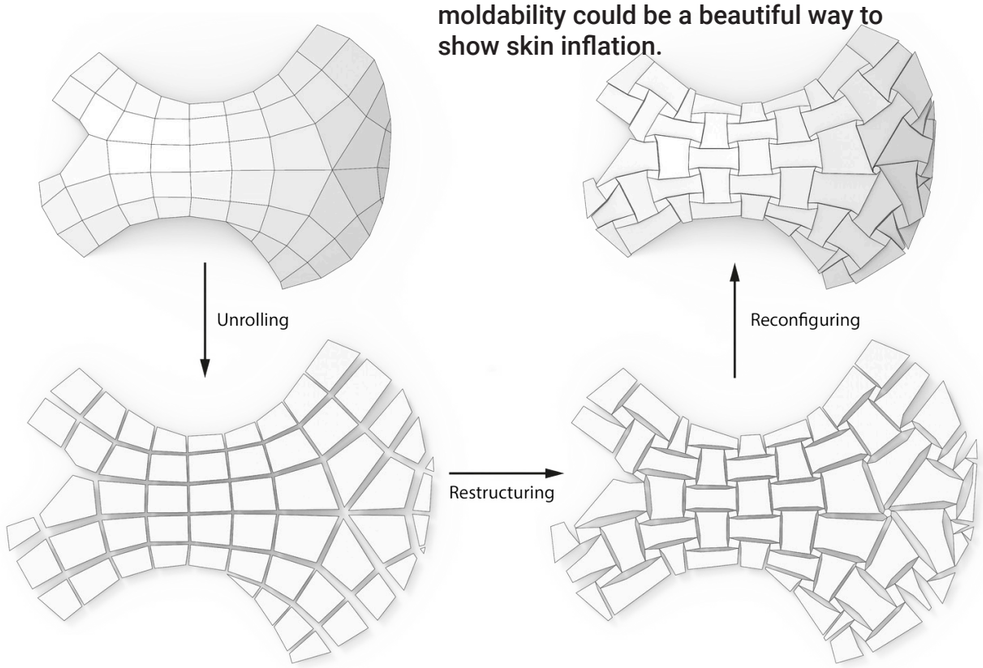


The servo makes a lot of not so subtle noise, which we're not fans of.



Following a discussion with the teachers we decided to experiment with synclastic surfaces. They are tensile surfaces, that is, surfaces which carry only tension and no compression or bending, rely on double curvature for their stability

We think this is an interesting structure because it is skin like in that it reminds us of a cell patern. Its reconfiguring moldability could be a beautiful way to show skin inflation.

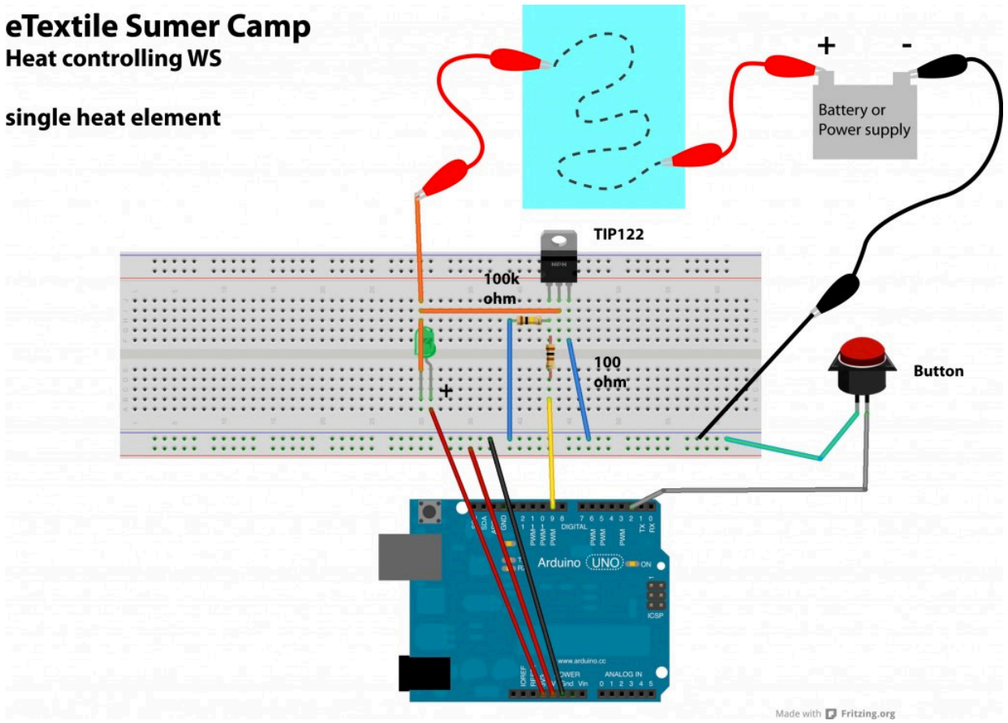


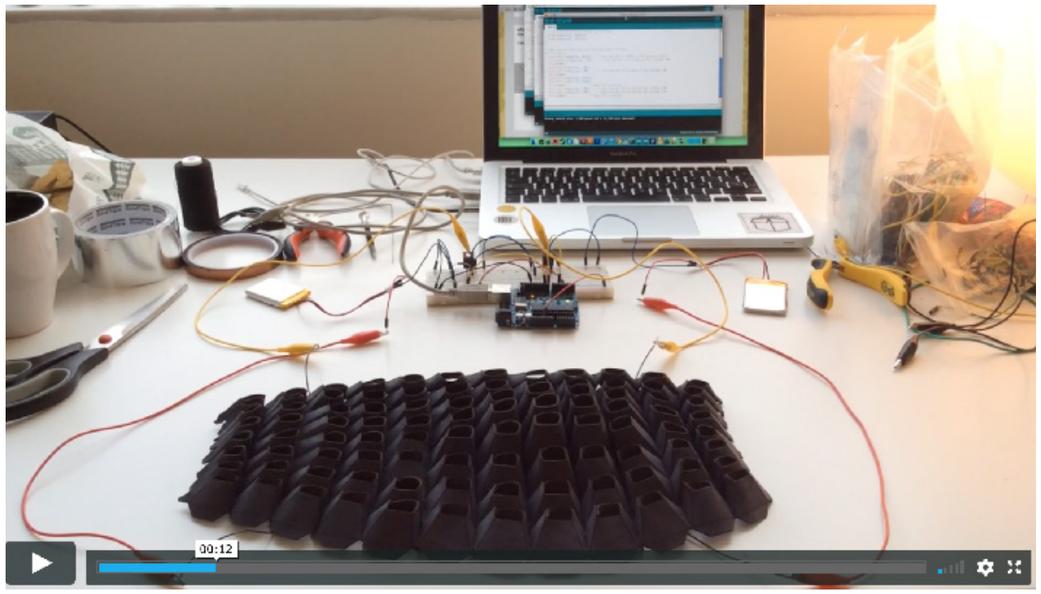
Ying Gao's dresses become animated in the presence of strangers

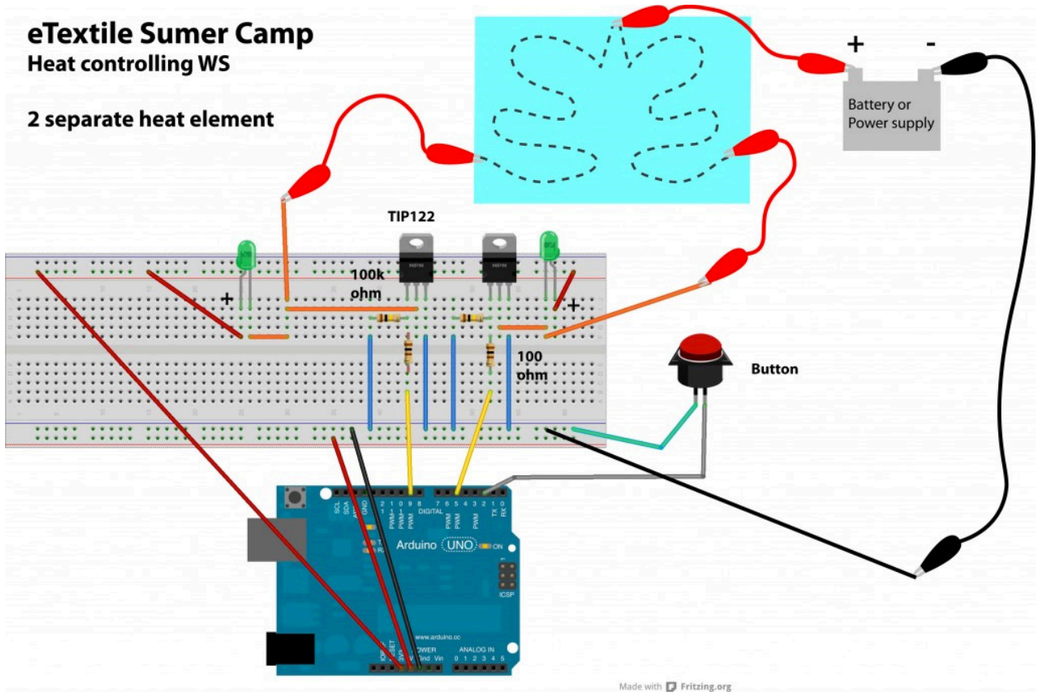
6,287 views

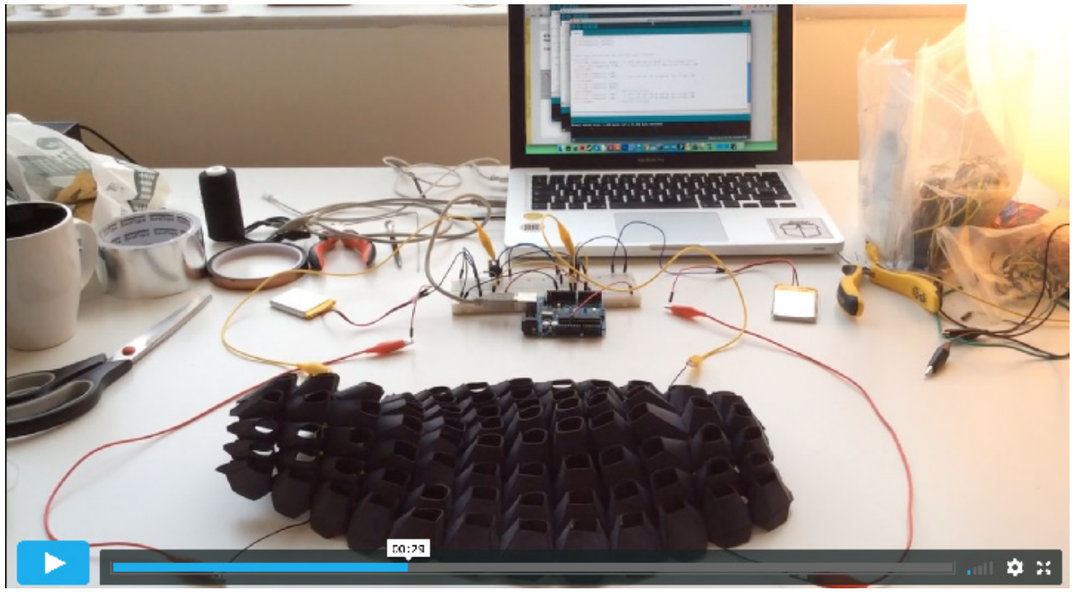
38 4 SHARE SAVE

Ying Gao's smart textile are a source of inspiration in both our aesthetics and our process.

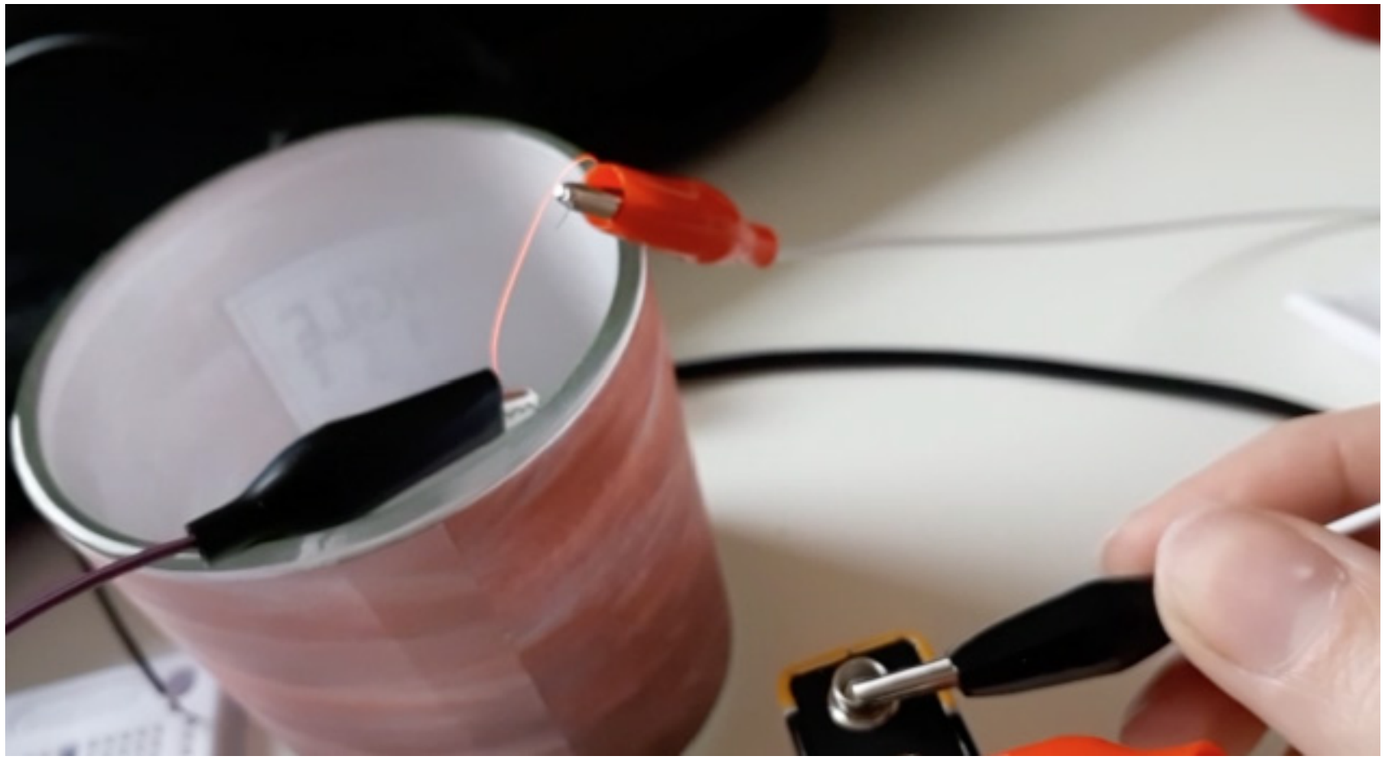






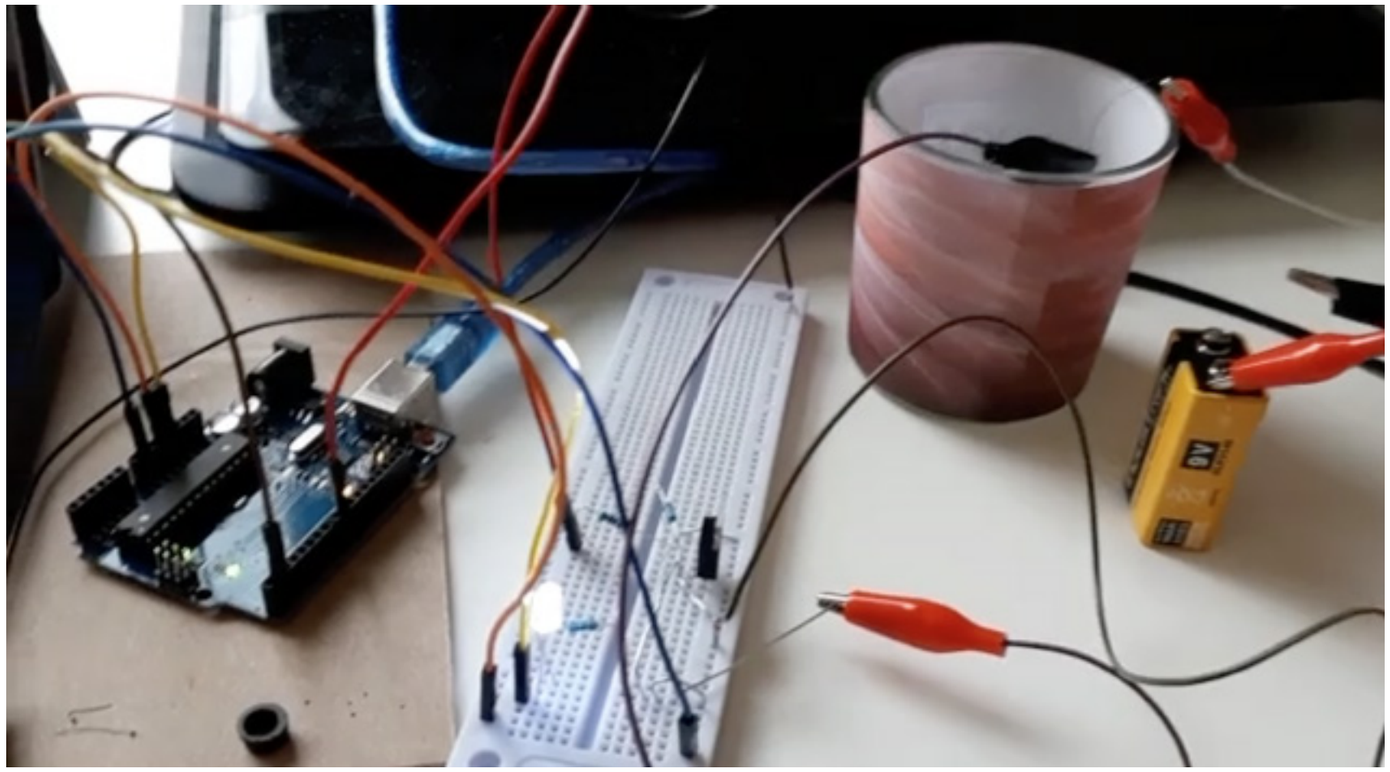


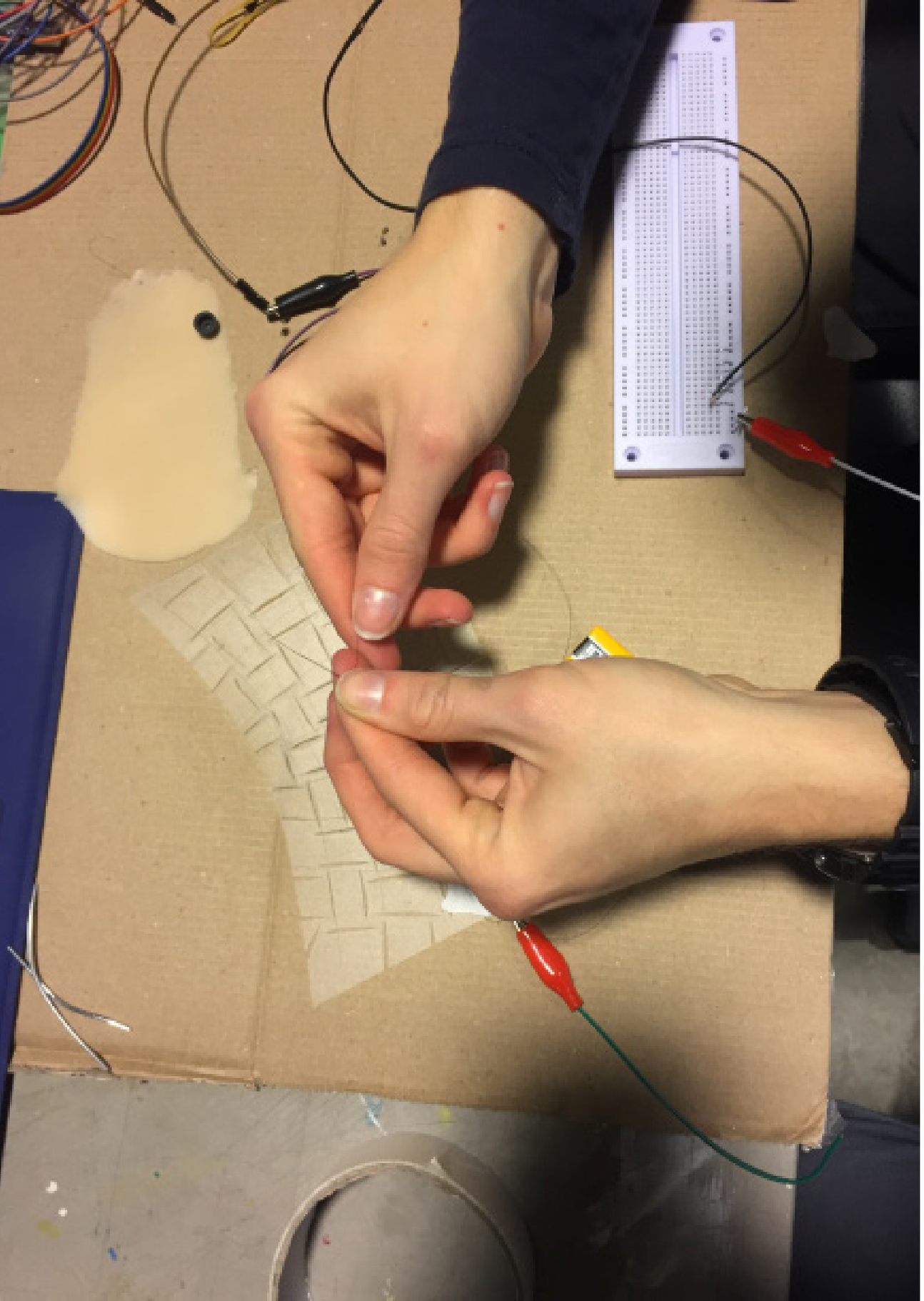
Through some intensive research we found a similar project on vimeo. The intent is not at all the same but the workings of it : moving a textile like surface through arduino are exactly what we want. We decided to try it out and see what happens.

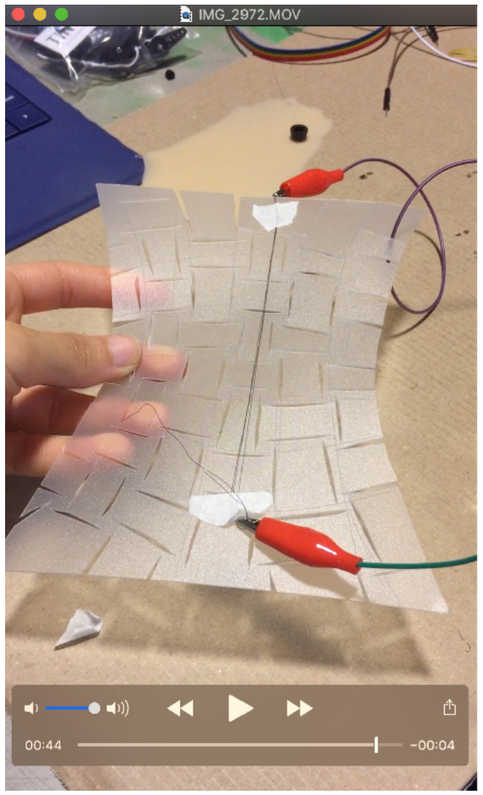


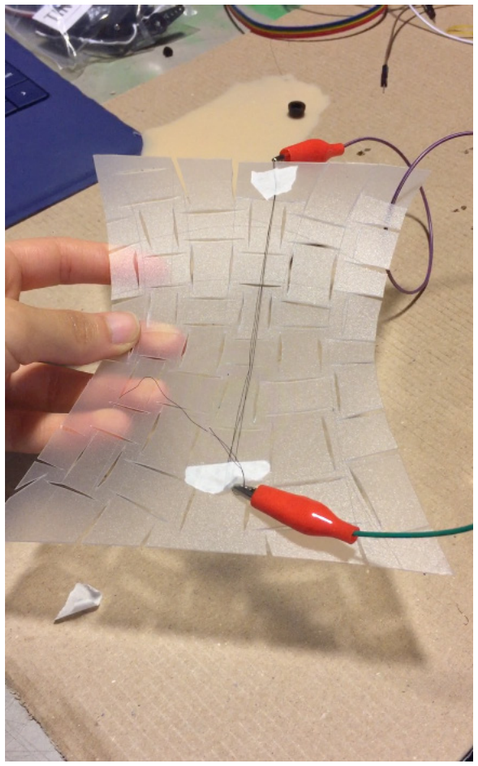
Efraïm took the electronics home to work on them after class. Although he managed to get the system to function he found out that the wire heats up too much to the point where it becomes red hot.

We all agreed that we needed something simpler.



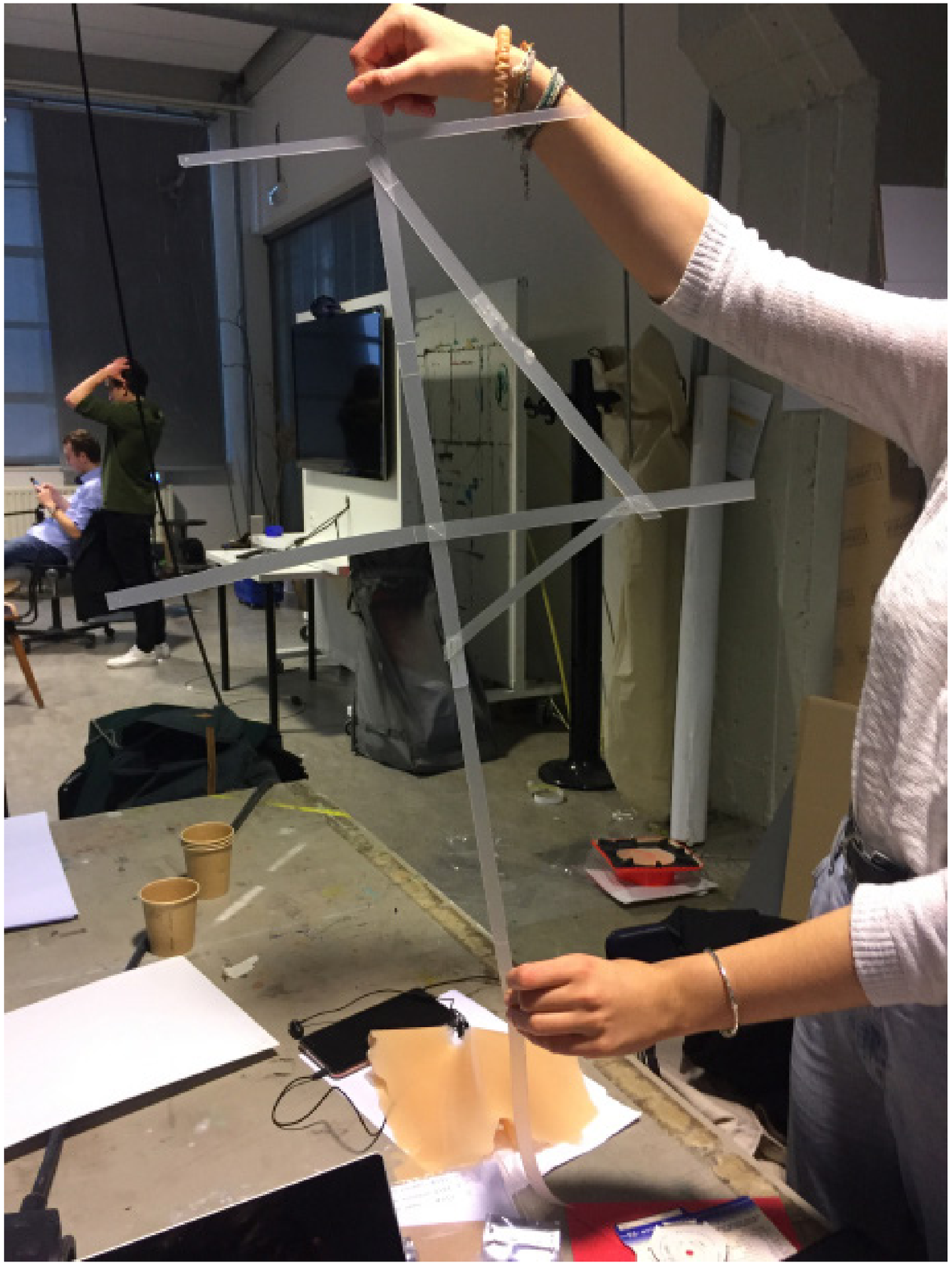


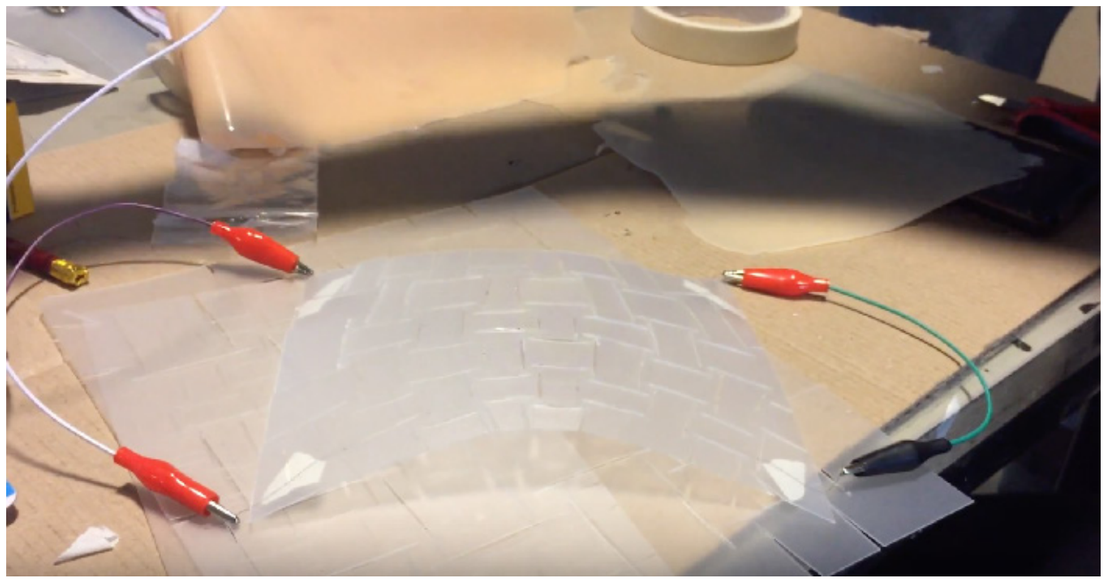




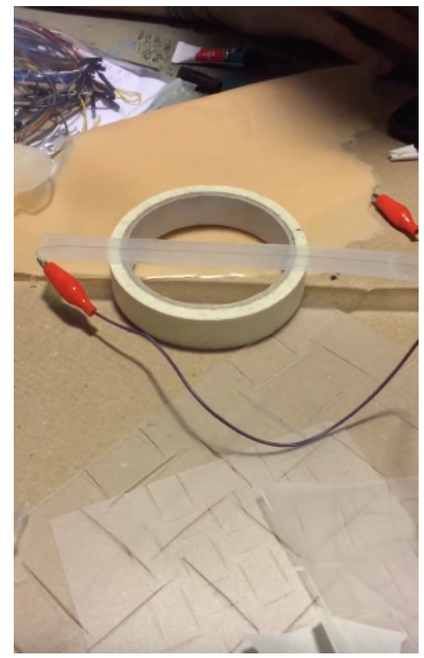
Some experiment on our synclastic surface which Léa cut from hard plastic. We are starting to see glimpse of what could be but t's not working as we wish yet... It's lacking a respiration like movement. A linear structure or grid makes it too abrupt. We need to think of other solutions.

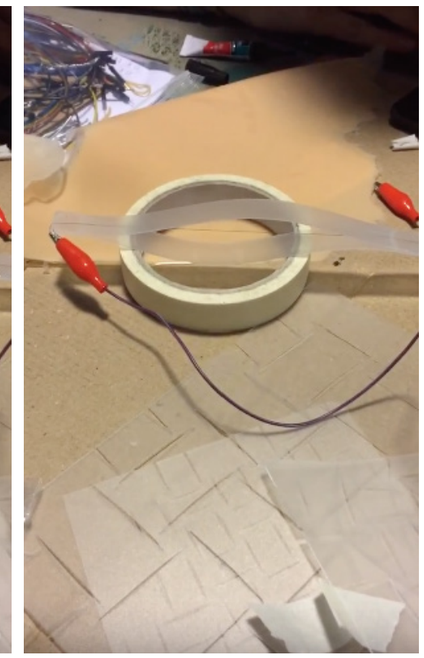
A supporting structure Léa made for the silicon skin.





Just when we were starting to doubt using the flexinol at all a spark of genius hit us and we decided to try a cross structure. It inflated exactly how we wanted it to. This felt great!
We are only using a 9V battery to power it.

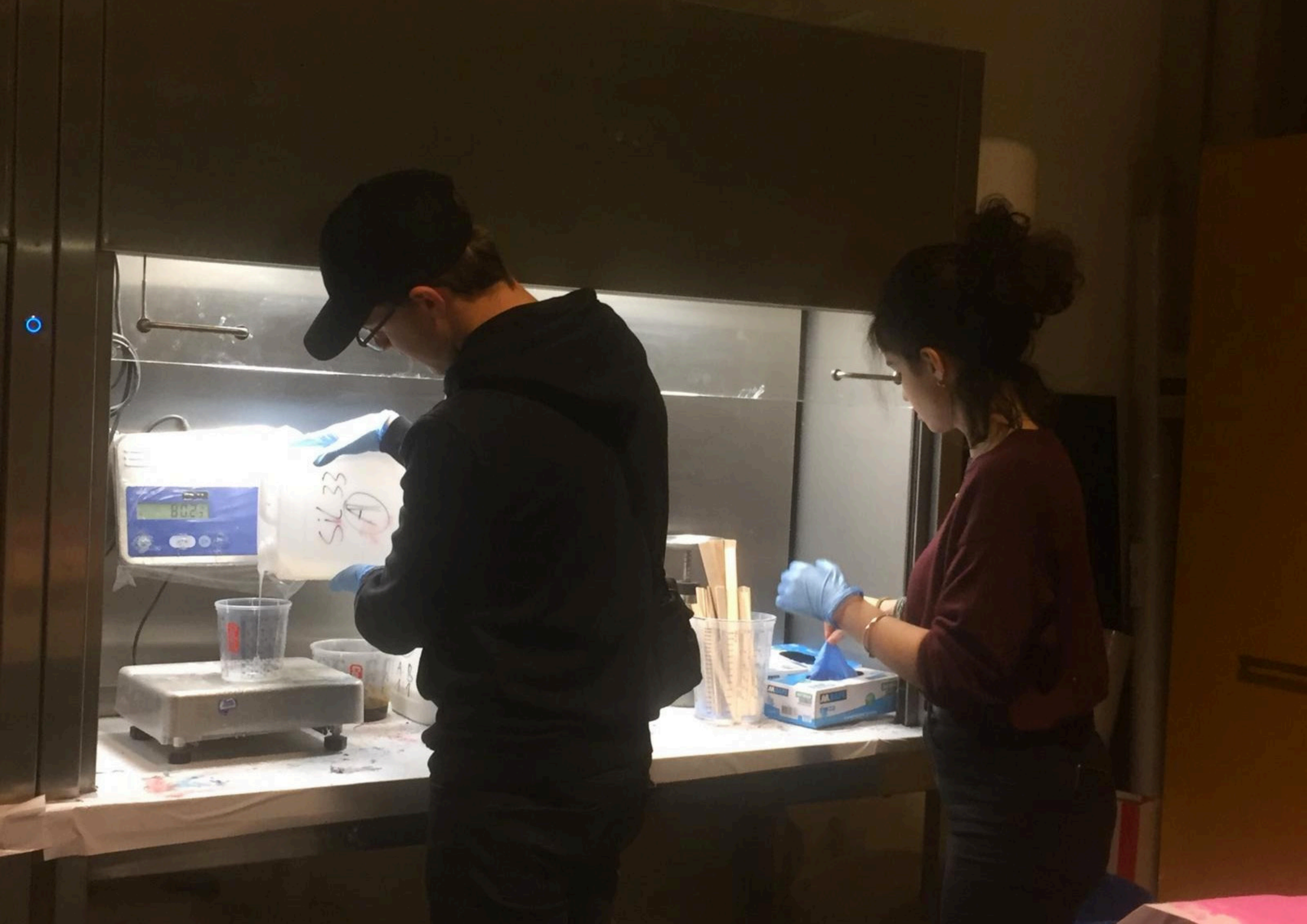


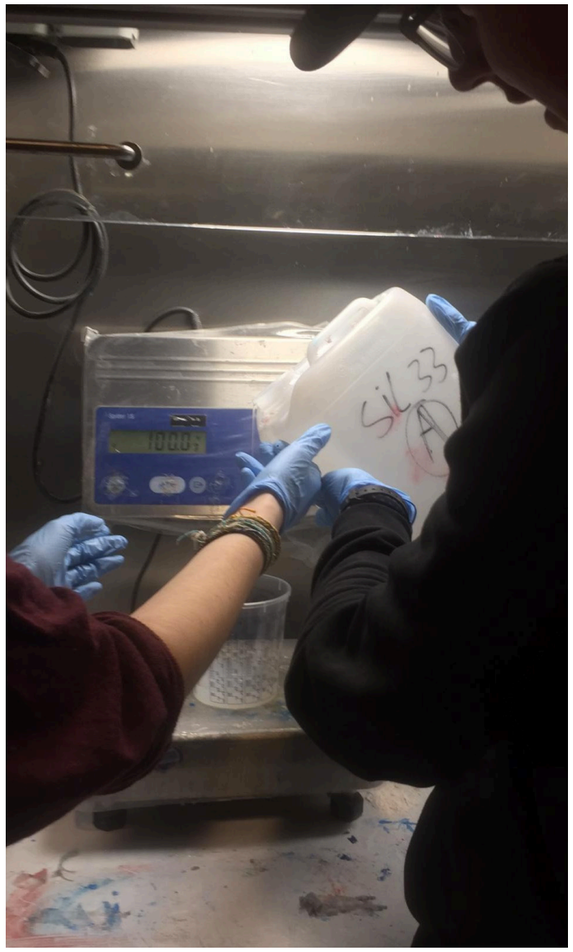


it works as well even without the synclastic structure or crossed wires. All we really need is for the wire to be tensed. Finding a durable way to have completely straight is our next challenge.

It also works on a human body! Next step is the tailor it to Sarah. Thankfully we have a sur mesure mannequin.

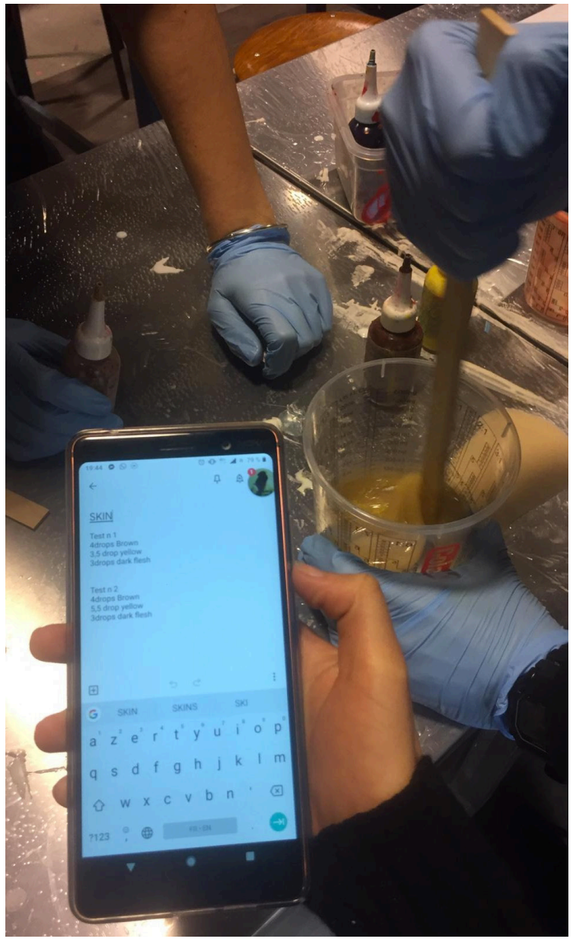
We put a layer of silicon with a hole in the middle atop of the pre-existing prototype and it has the exact growing tumour effect we've been thinking about since the beginning of the trimester!


Silk 33
A
B
80.25

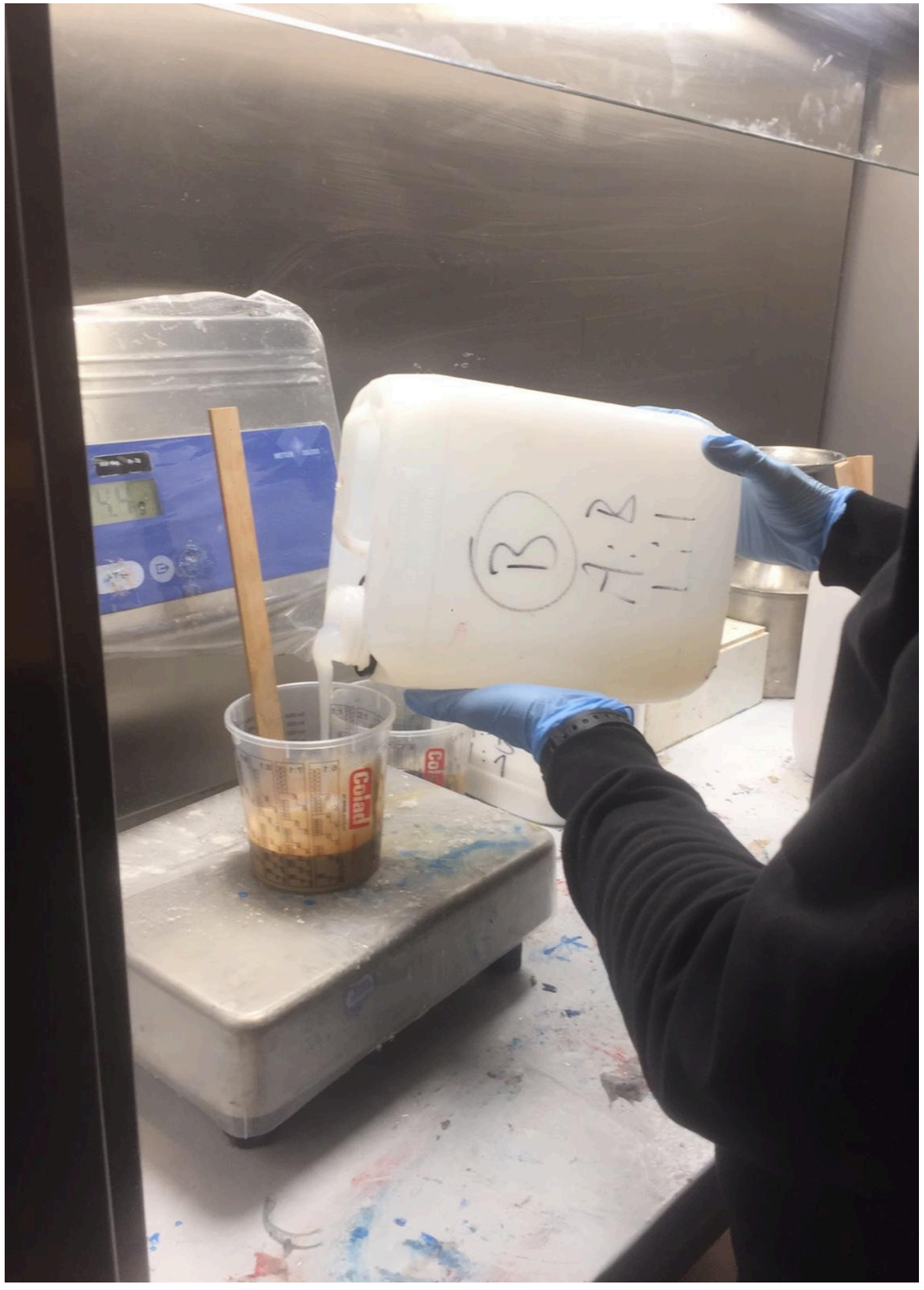


The process of silicon making requires to mix two components. Here we are trying to get the measurement exactly right. Nothing can be left to hasard.

To get a rich skin colour we're mixing 3 colour pigments : Brown, Dark Flesh and Yellow.



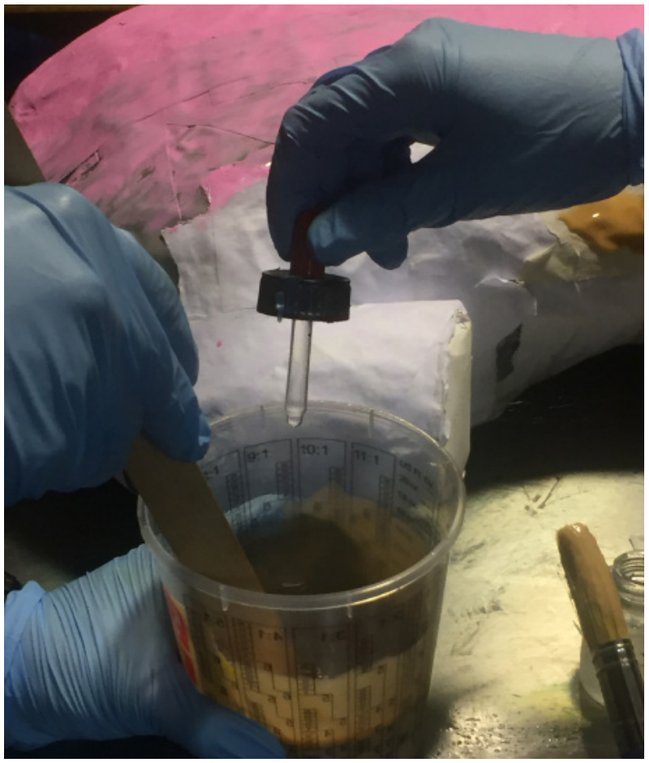
We made a couple of samples and came up with the perfect formula for Sarah's skintone.

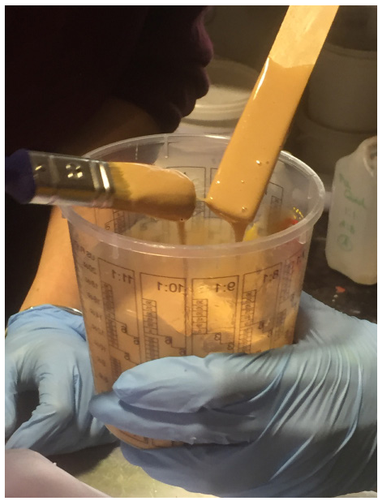


adding the catalyst after the pigments in order to have the time to work on the colour.

the texture is looking nice

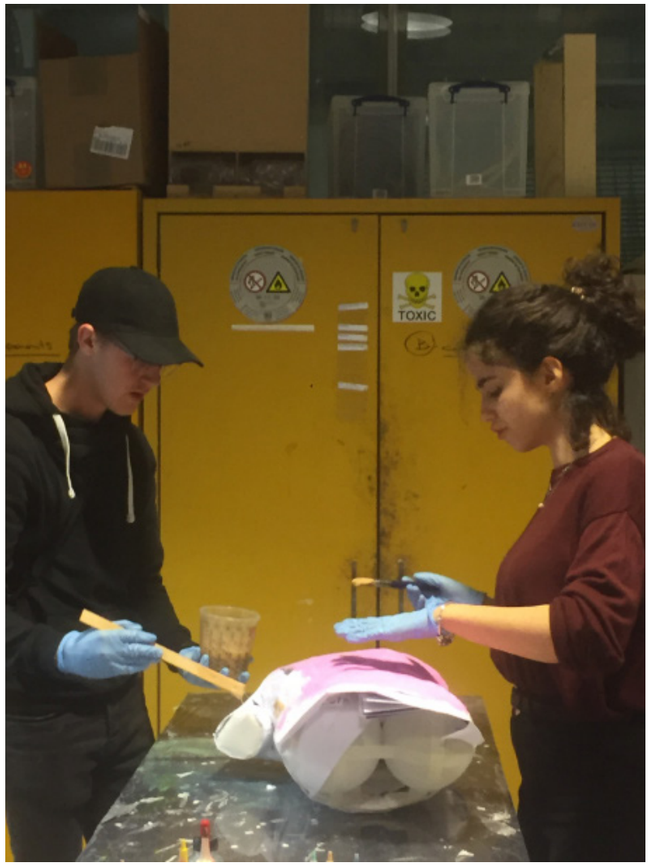
preparing the mannequin





Because we are using a curvy structure as our mould, thickener is a necessity. We thought we'd tried a couple of consistancies before covering the whole mannequin.

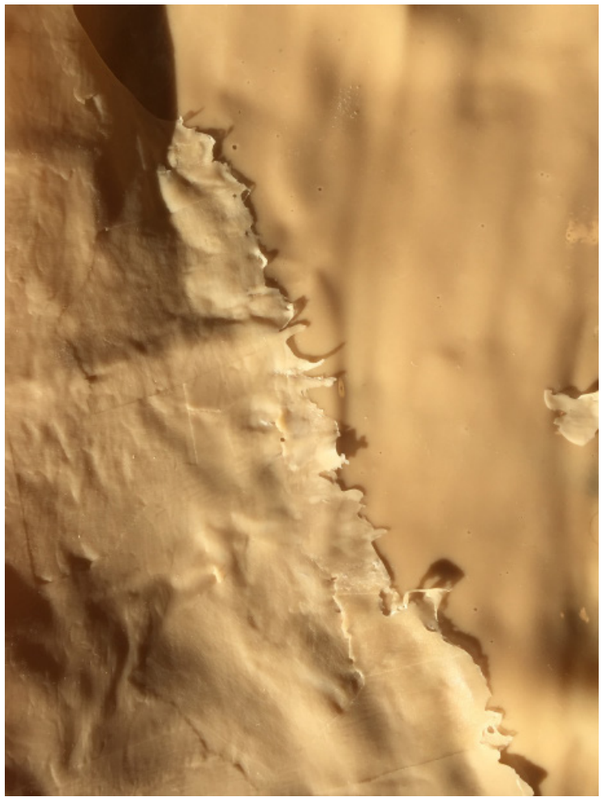
Pouring our silicon onto the mannequin. This requires precise timing as we only have 15 minutes to work the silicon once we added both the catalyst and thickener.



This is the result of our silicon mixed with 2 drops of thickener. We're worried because the silicon is hard to work with and it has a gooey apperance.

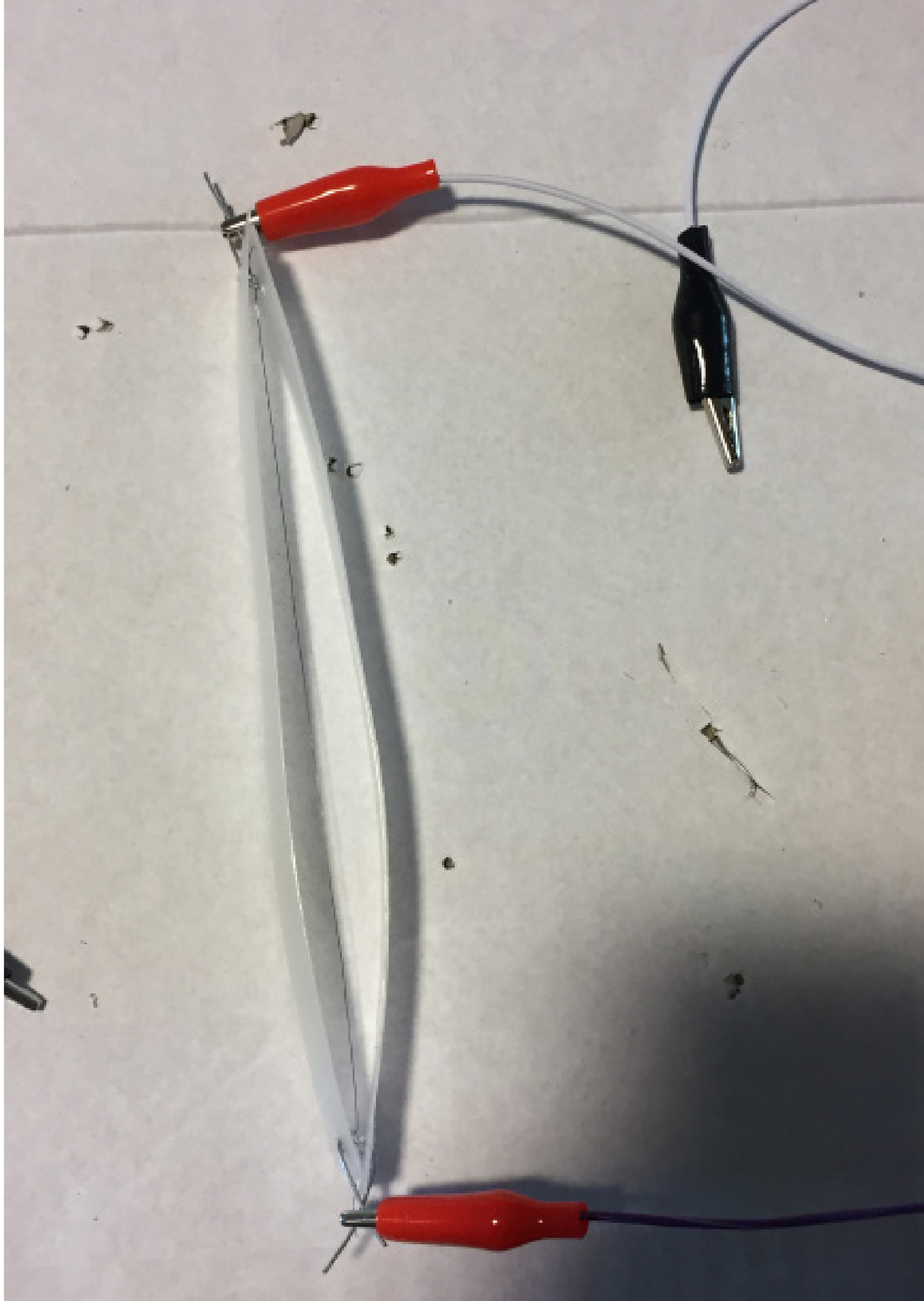
Putting the mannequin in the storage shelf after a looong day of work.
(See clock in the back)

The results of the thickener samples have dried and we've come to realise that even one drop does the job.

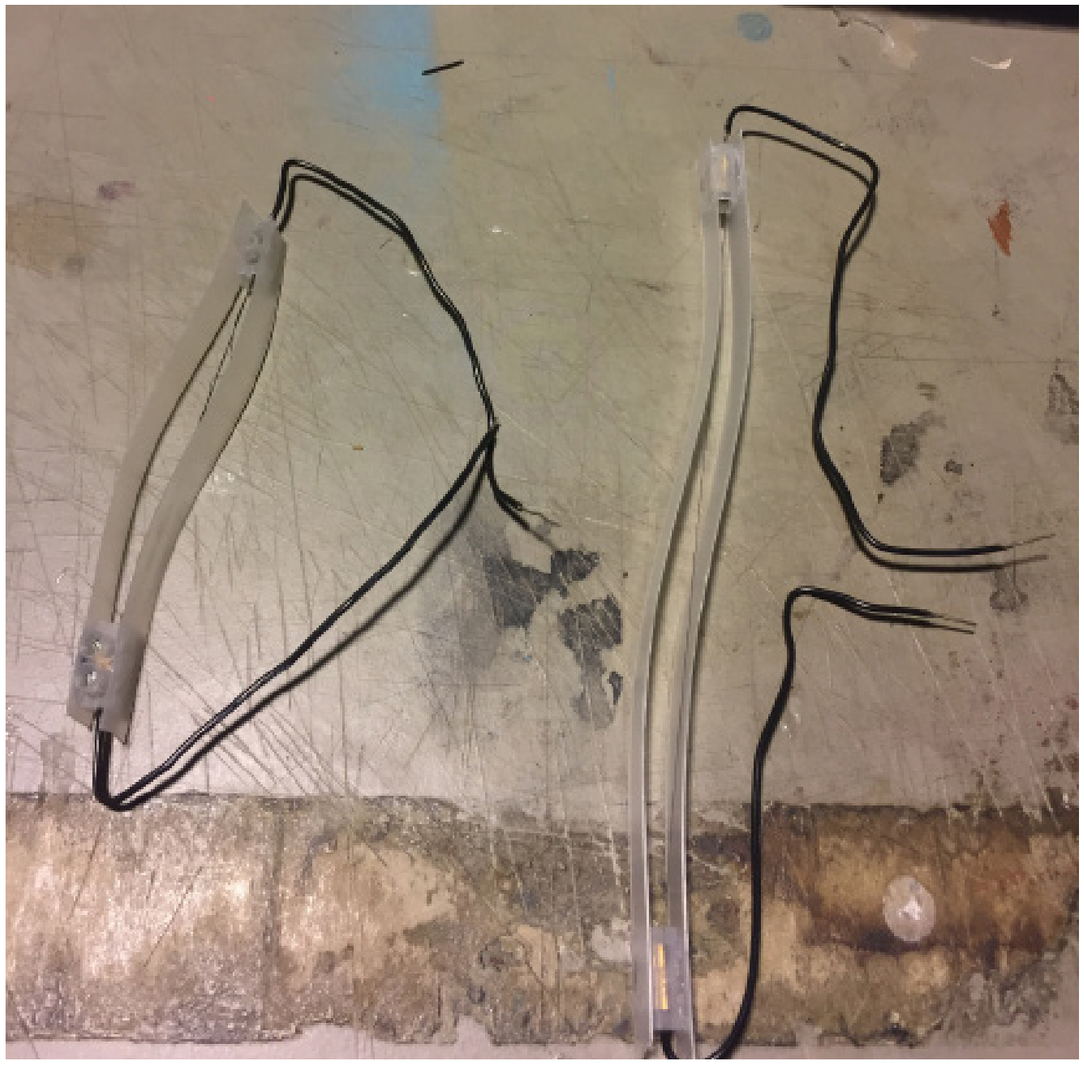


Even though we're not happy with the consistancy or transparency yet we found that the colour was almost a perfect match.

Our structure is made of the same hard plastic we used for our mechanism.



The final version of the lifting mechanism. We're very happy with its look. It's important that the metal wire is tense and straight in order to get our desired effect.



Now that most of the technical challenges are on their way to be solved, we had a talk about our conceptualisation and creative direction. Sarah then worked on a poem which would be a voice-over for the video. The story-boards were then conceptualised.

9 March 2019 at 23:47

the beautiful unknown
exists in layers
i feel it in constellations

it's living
and breathing

i want to peel it off
to see what's hiding underneath

the beautiful unknown is
a surface eroded by the impact of unknown objects
growing from the inside out

craters turned into planets

it's bubbling
into a plastic genesis

a soft cover between the inside and outside world
would you conceal or show it

was i hit by a meteorite?
for these craters to grow?

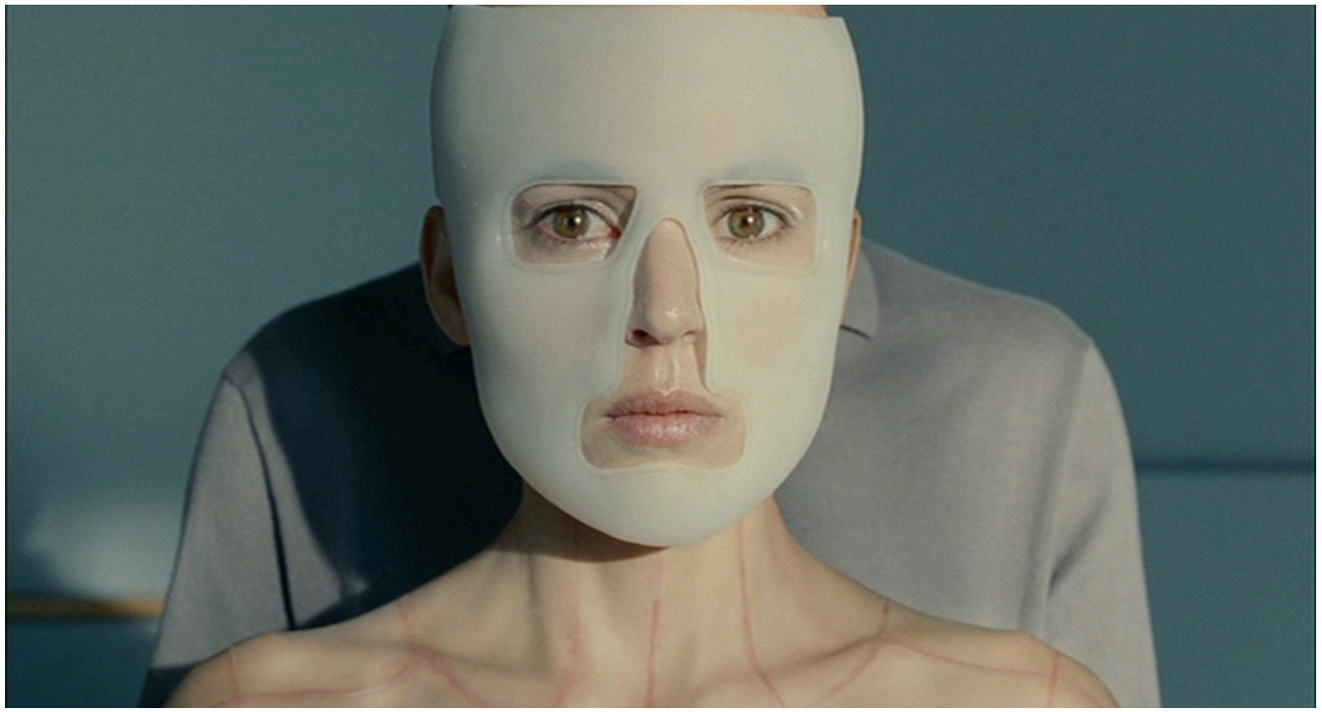
was i burnt from the inside out
for these ebullitions to rise inside me

is something hidden underneath
for this urge to peel this cell tissue off

am i beyond a celestial body
for these constellations to form

is it alive
because i can feel its respiration

storyboarding

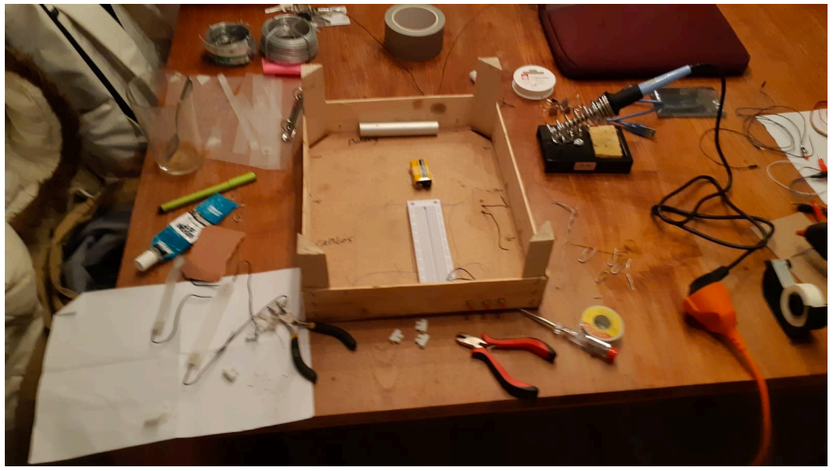


After a lot of hands-on work Léa managed to perfect the dough.

Our first idea to cover the mannequin with acrylic paint in order to get a smoother surface backfired. We had to think of other solutions. The outcome of this brainstorm was pâte à sel, which seems to be a french-specific thing as none of our non-french classmates seemed to know what the hell we were rambling about.

Pâte à sel is a dough made out of flour, salt and lukewarm water. It's airdrying and cheap so it's often used by kids.
On top of being cheap and easy, another advantage is that the dough will probably give us an interesting texture which could play on the creative direction we're going for with heavenly bodies as an inspiration.

The silicon was much easier to work with this time. The texture is also looking way smoother. We're very happy.
Now we just have to wait for the silicon to take in the flour to get the crater like effect that we want.

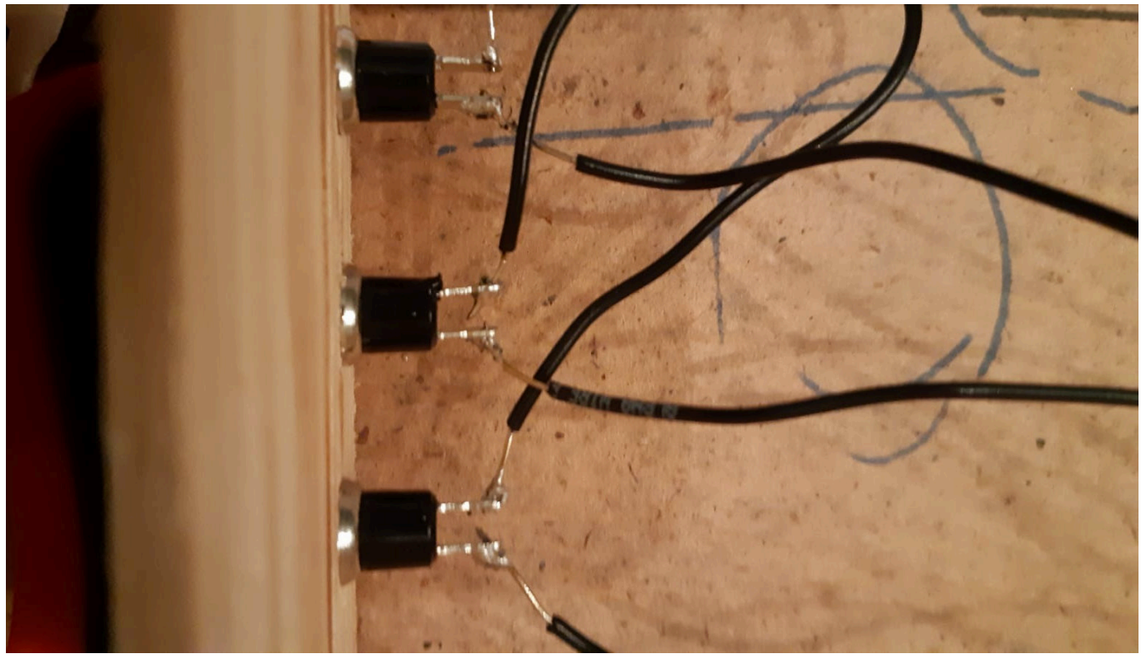


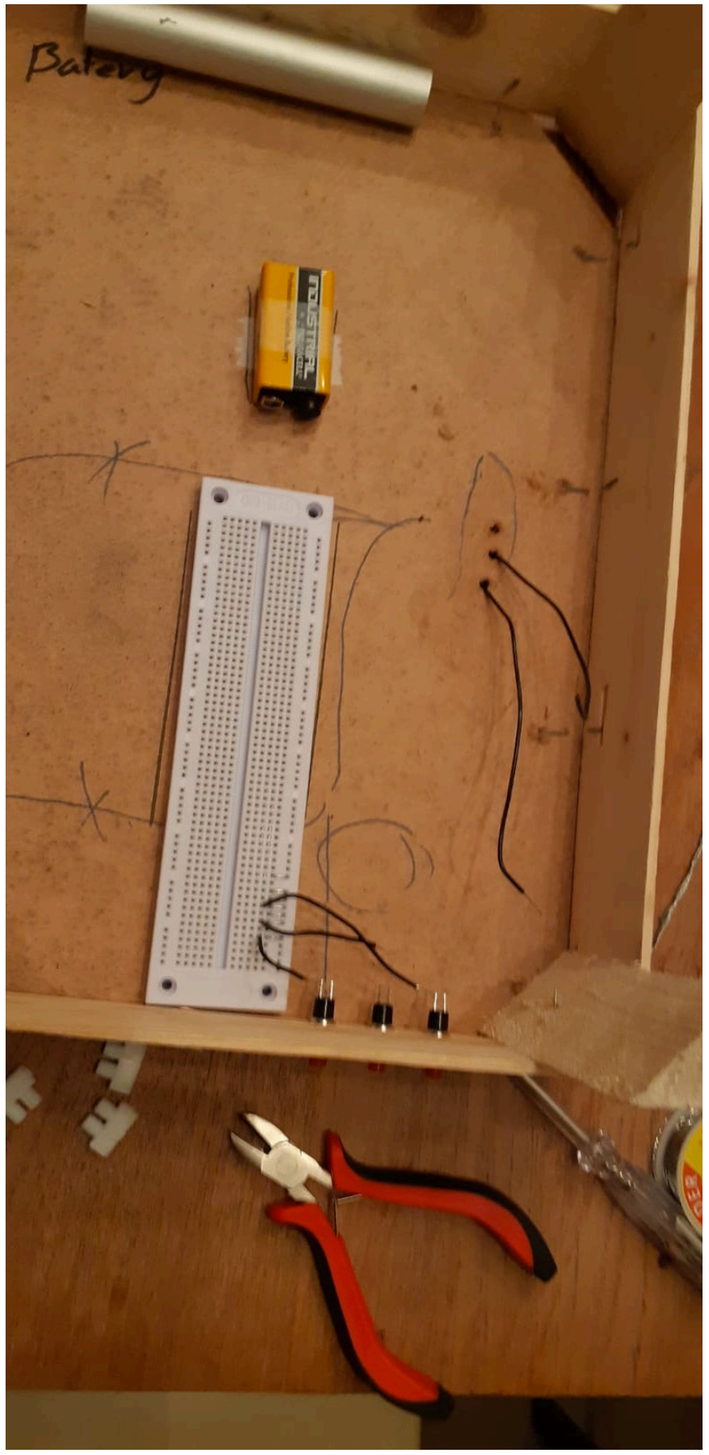
Black box action...

Efraïm

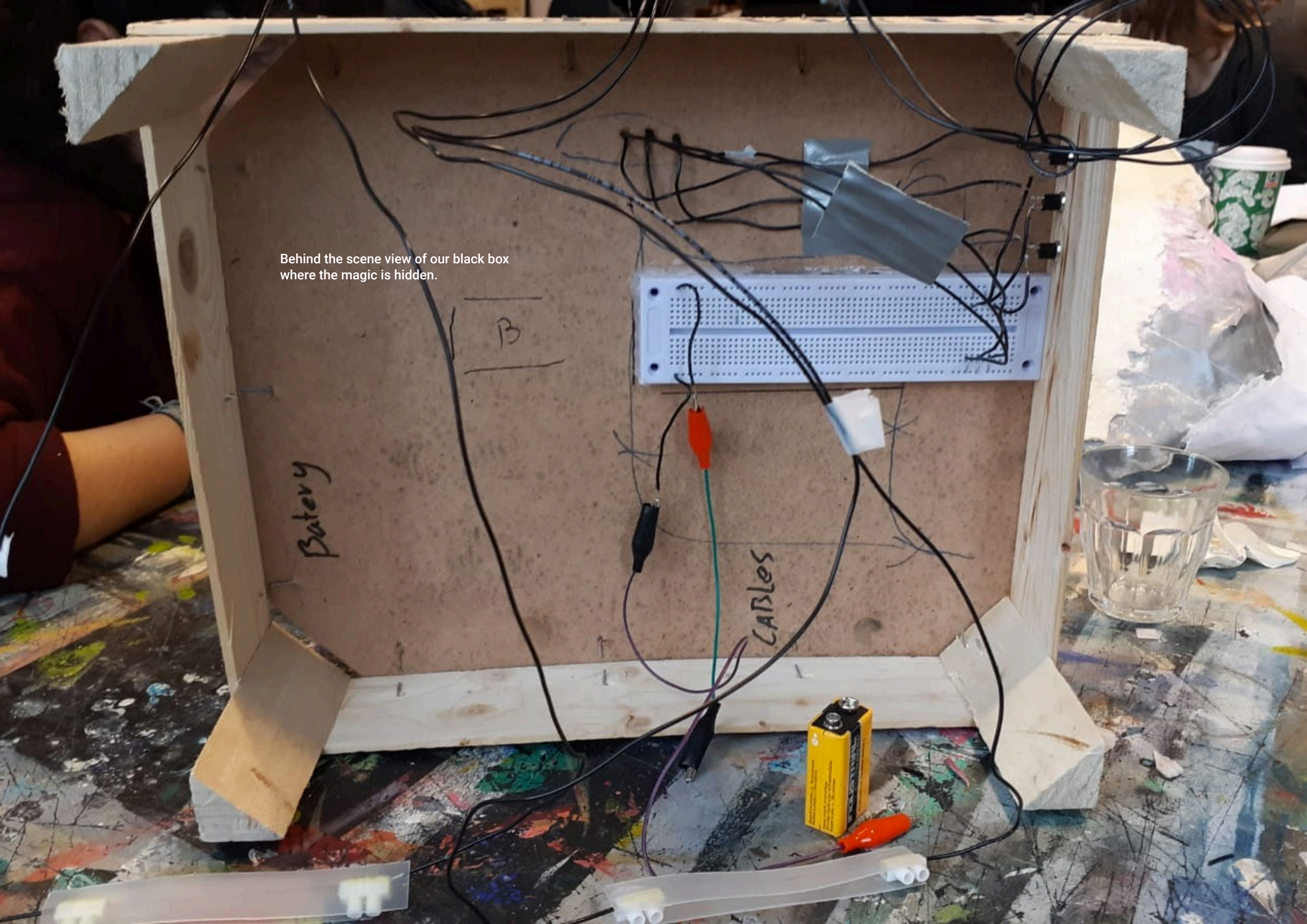
hello 😁 so i finished most of the wirering 😁 just one muscle to do 😋 the box is all wired up and i learned a big mistake from us was that super glue takes 10-40 minutes to fully dry 😅 but oh well, not its good. im excited for tomorrow 😋 maybe we can even finish this tomorrow 🤫 anyways, see you tomorrow 👋

01:40





On the left page we're stretching the wire with pliers. On the right we can see that the samples for the mechanism are just see through enough.

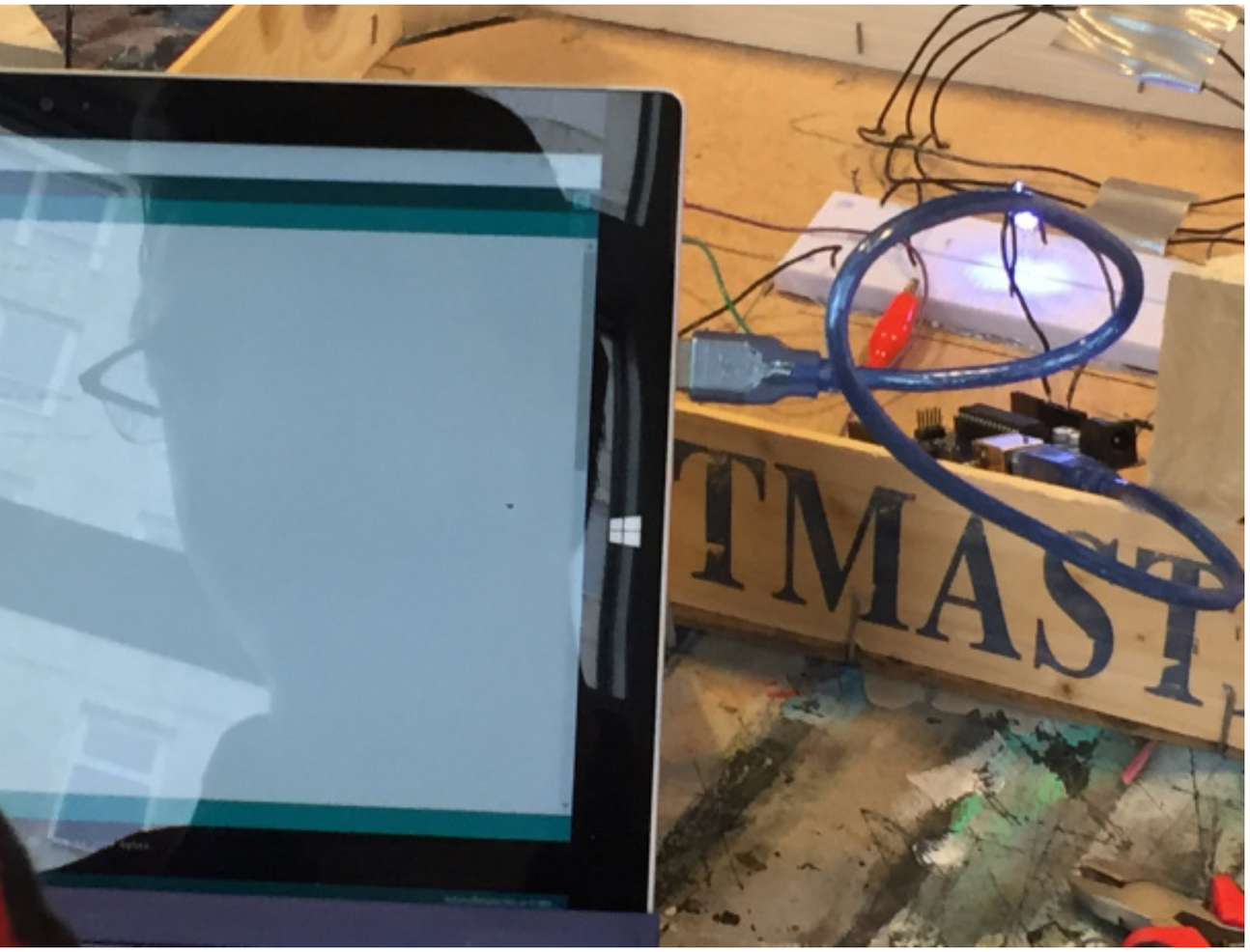


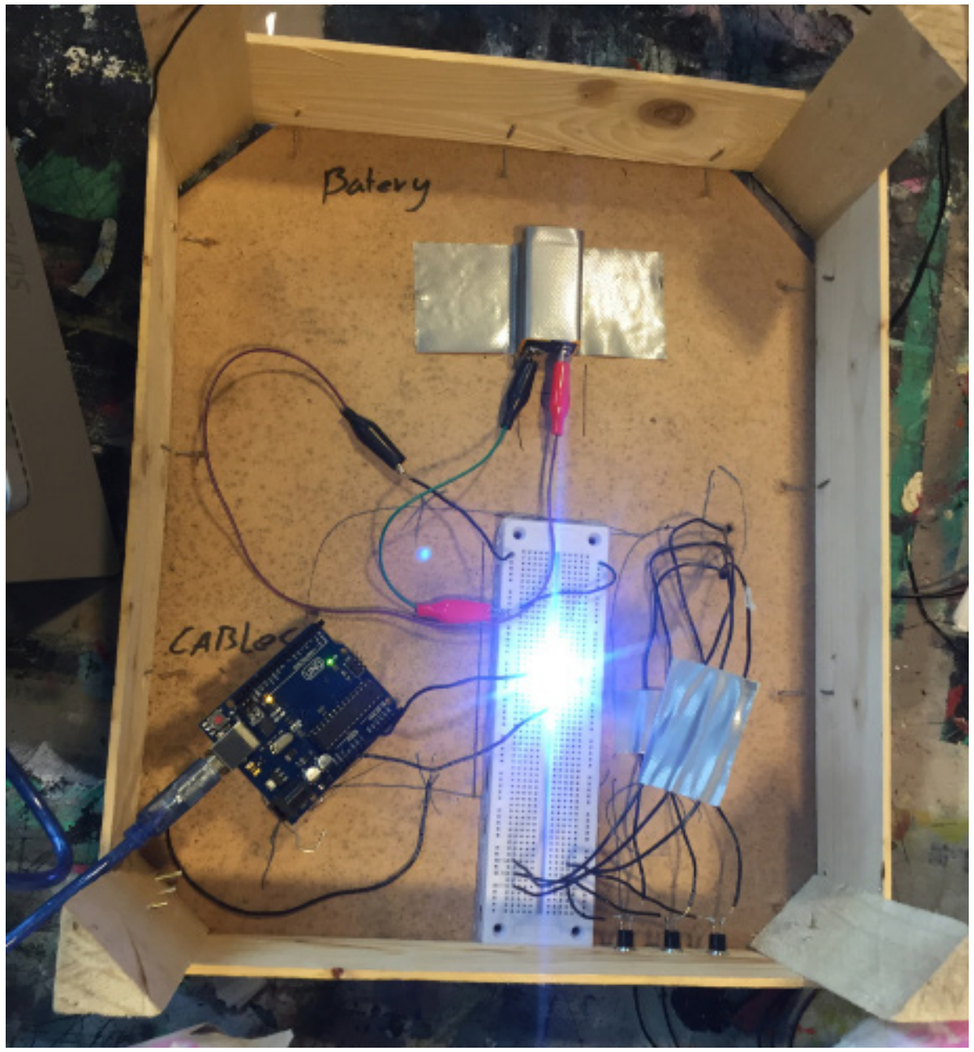
Behind the scene view of our black box where the magic is hidden.

Once we peeled the silicon off our mannequin was left with a moon-like surface.

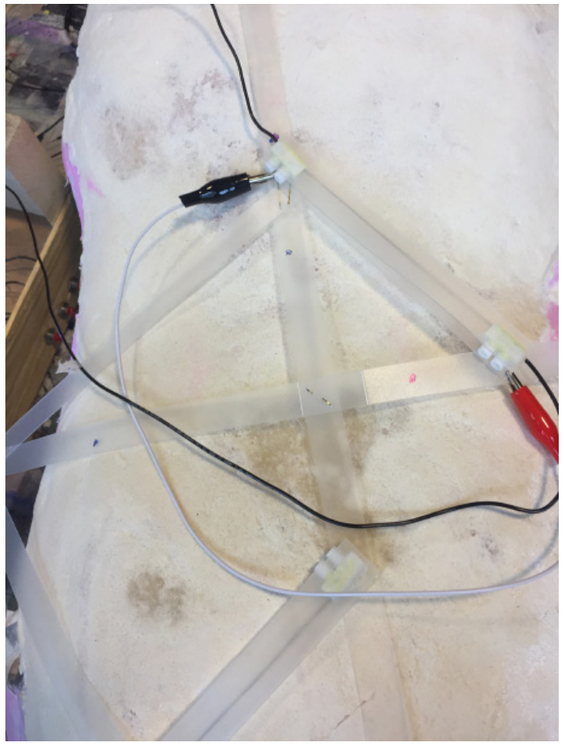
Working on the texture

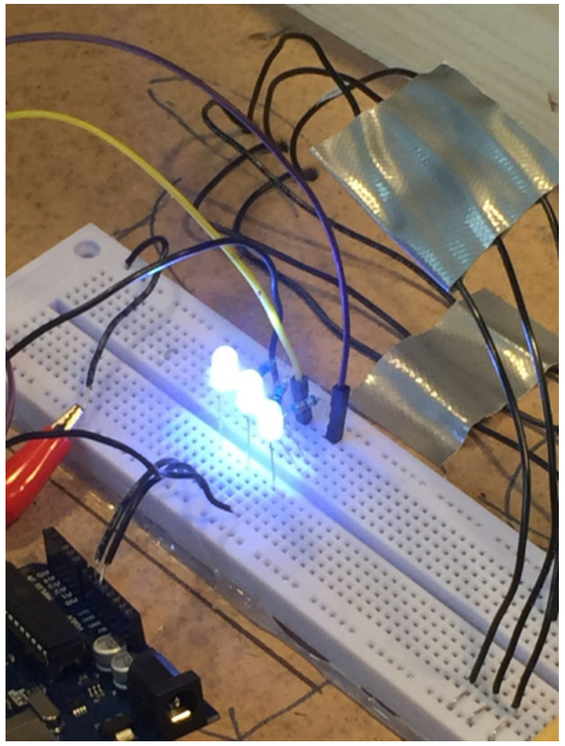
Trying on the skin. The texture came out exactly how we wanted.

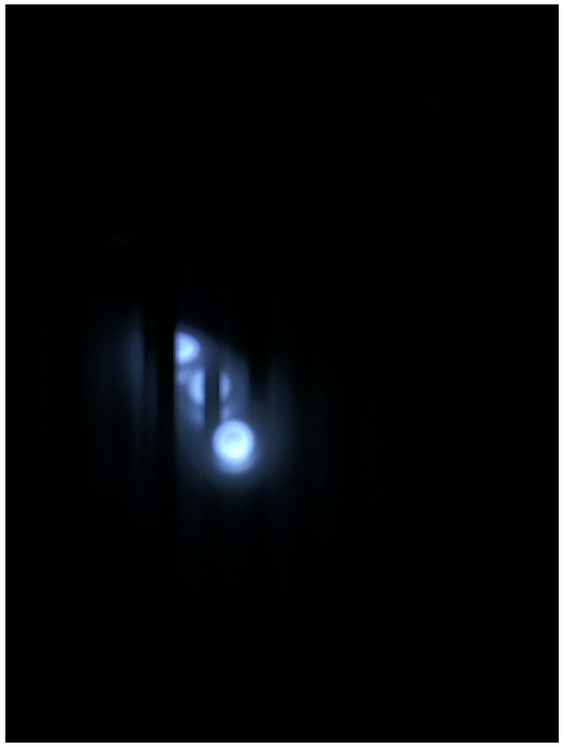


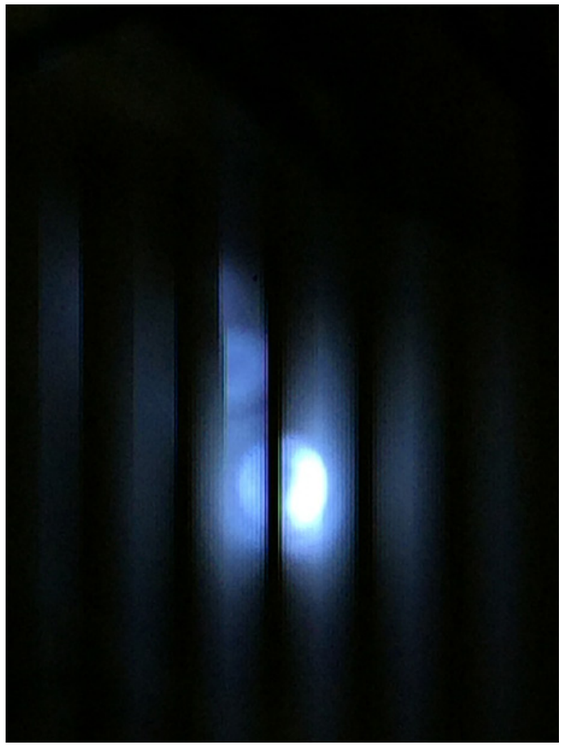


Now working on our arduino powered constellation.
The lights will turn on and off randomly.









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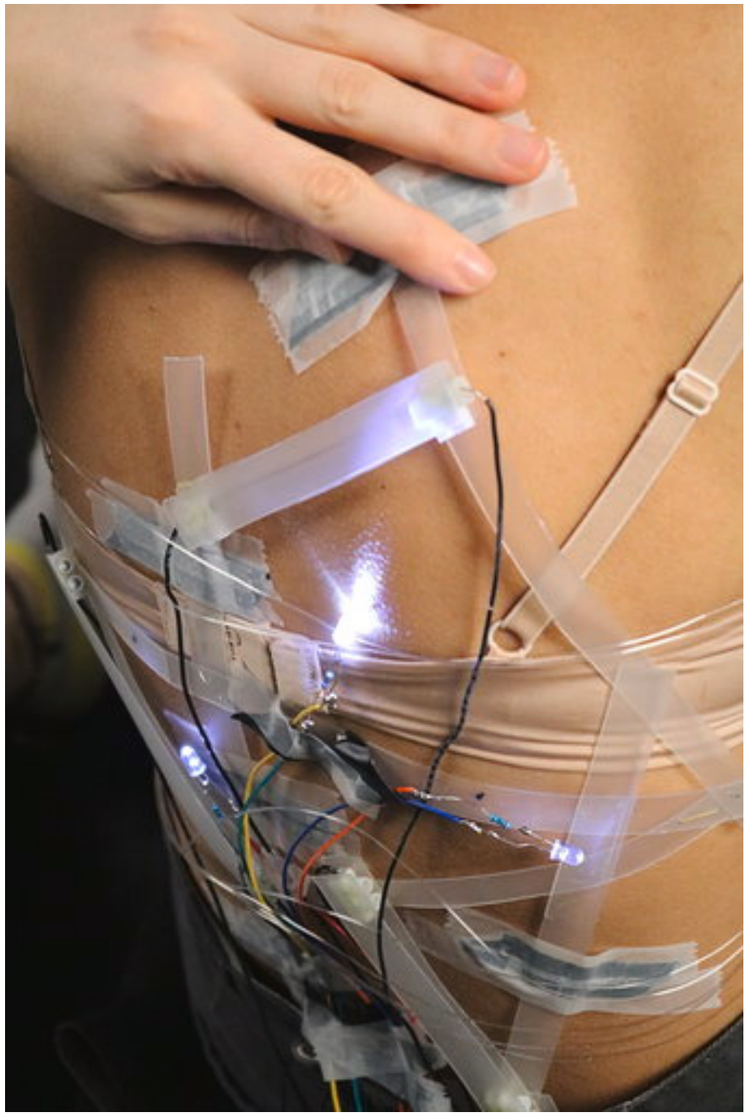

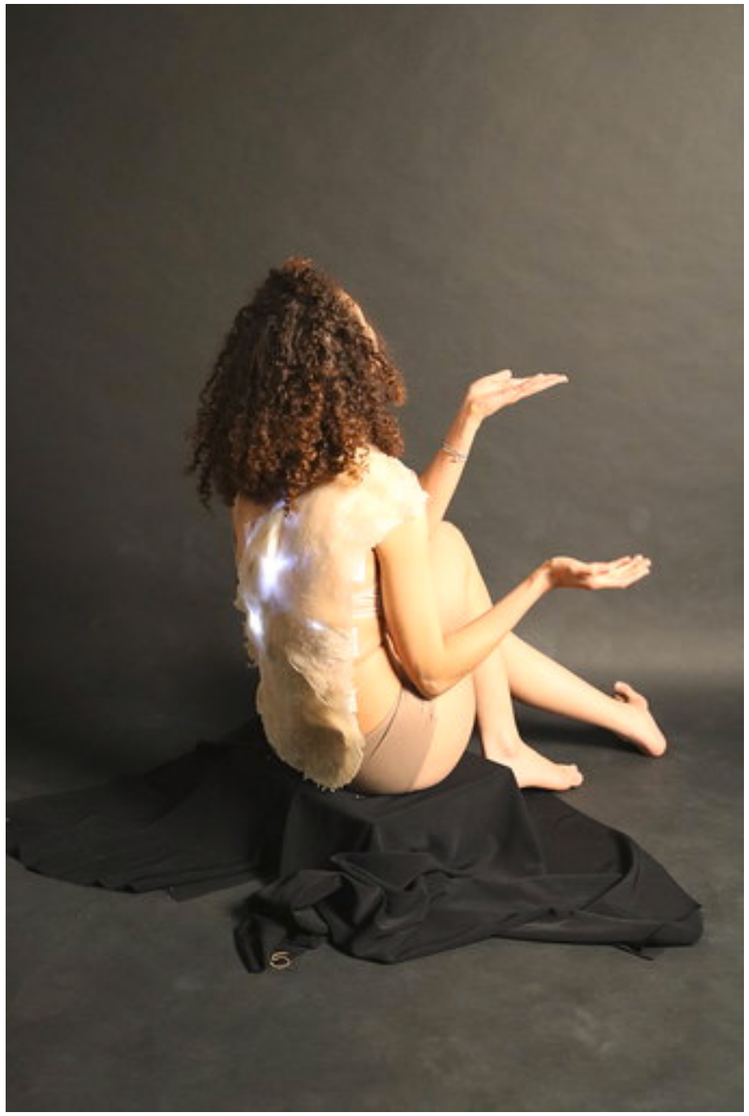

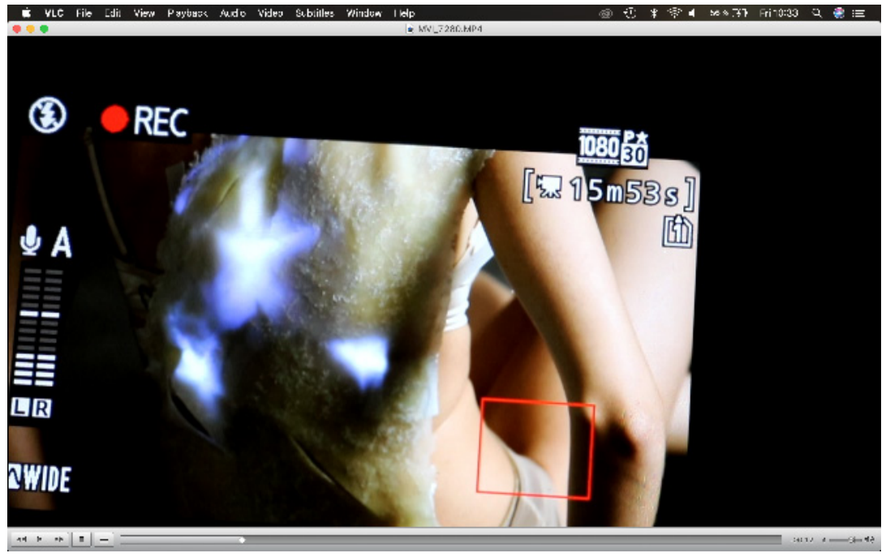
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Efraïm Van Der Linden
Sarah Hasni
Léa Simon