LIGHT UP
DOKUMENTATION

ROYA HAUPT

DESIGN & SOCIAL CONTEXT
UDK BERLIN
PROF. INEKE HANS

01 research & finding an act

80 out of 100 solutions for a drawdown could be implemented right now, would reverse climate change and safe money.

97% of experts are sure: climate change is human-made; the others are fossil industry lobbyists.

49% of global CO2 emissions could be avoided by everyone going vegan. With regenerative agriculture, reduced food waste and plant based diet could feed growing population until 2050 on current farmland.

01 research & finding an act

RAISED BED

A new urban gardening solution that works indoors and is made to be versatile.

THE SOLUTION

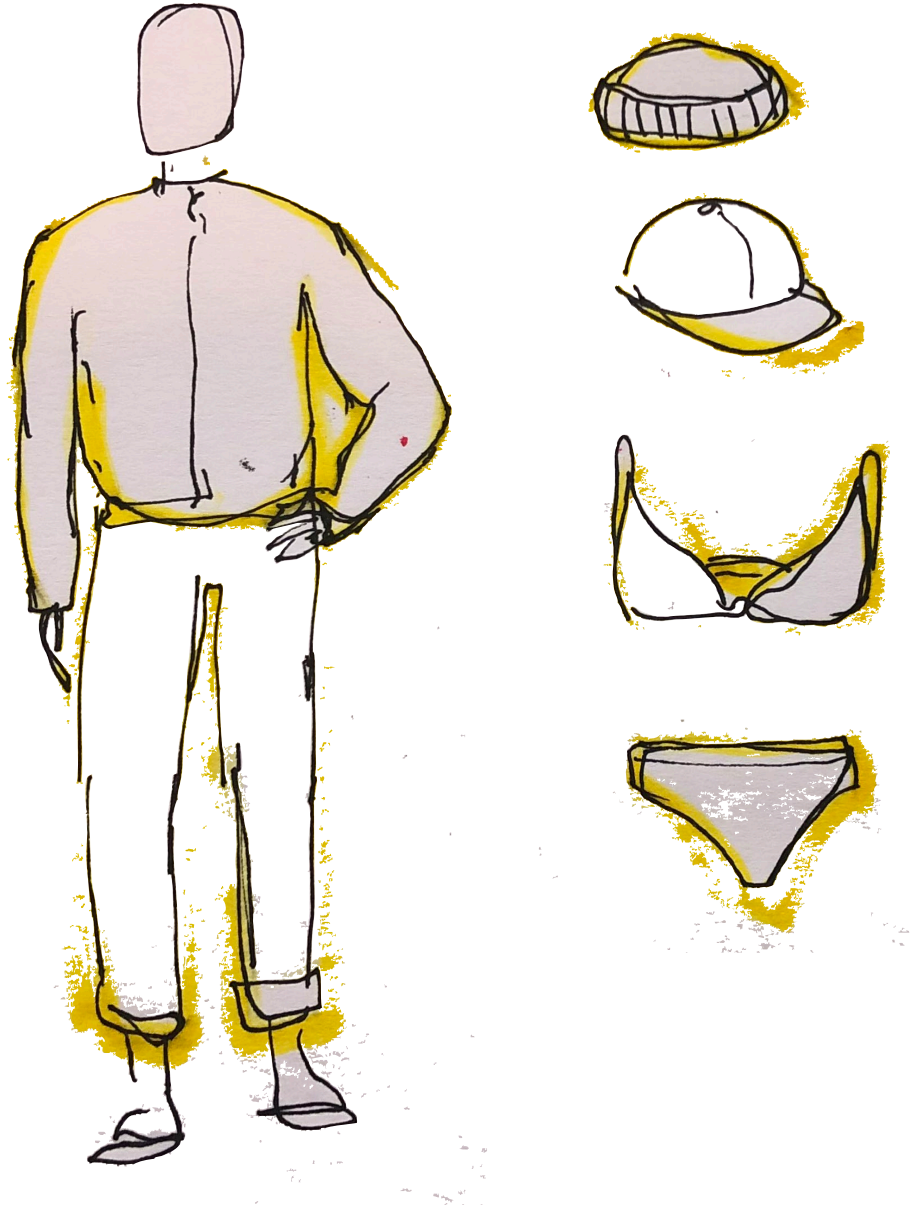
-interviews with companies/ individuals
(Ben & Jerrys, Oatly, Unilever, Mühlenegger, Patagonia, Einhorn,...)

-activists, multiple generations, influencers, politicians, sociologists, psychologists, philosophers,...

-easy-to-follow-guide on how to safe the climate

LIGHT SUIT

Textiles that lighten up oneself and ones surrponding. Use your own body heat to create light and enjoy your indeoendence.



INSPIRATIONEN

SPORTY SUPAHEROE

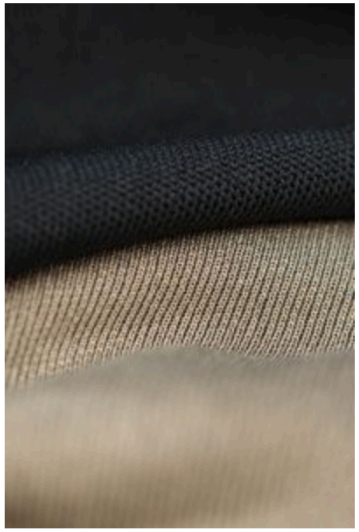
SOLAR CHARGED JACKET

HOLLOW FLASHLIGHT - ANN MAKOSINSKI

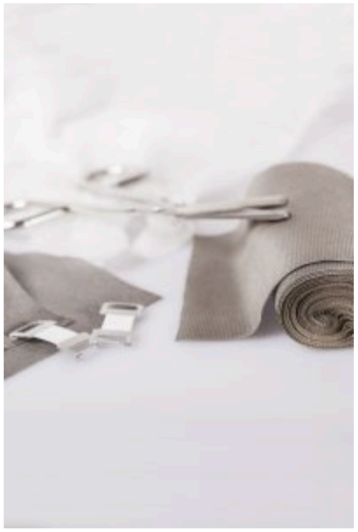
IGNIS - TOBIAS TRÜBENBACHER

SHIELDEX® PRODUKTE

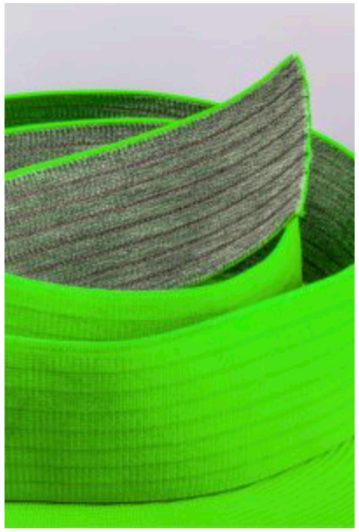
Fasern und Garne



Flächenware

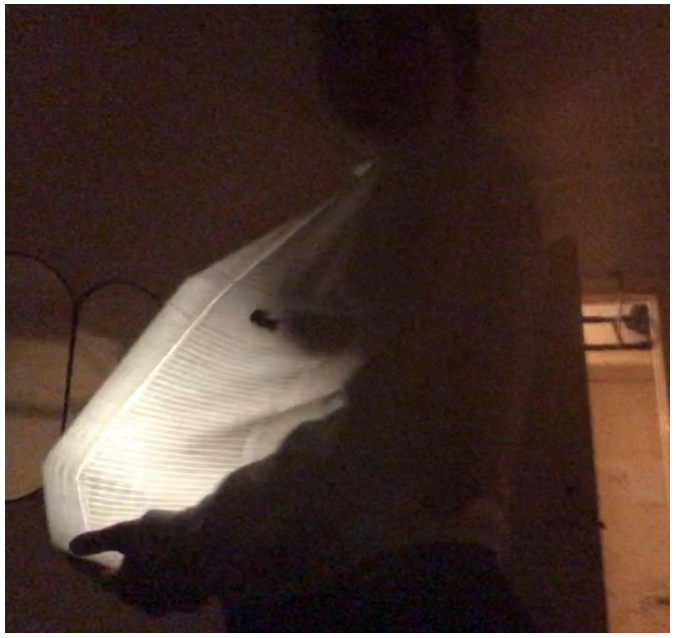


Endprodukte

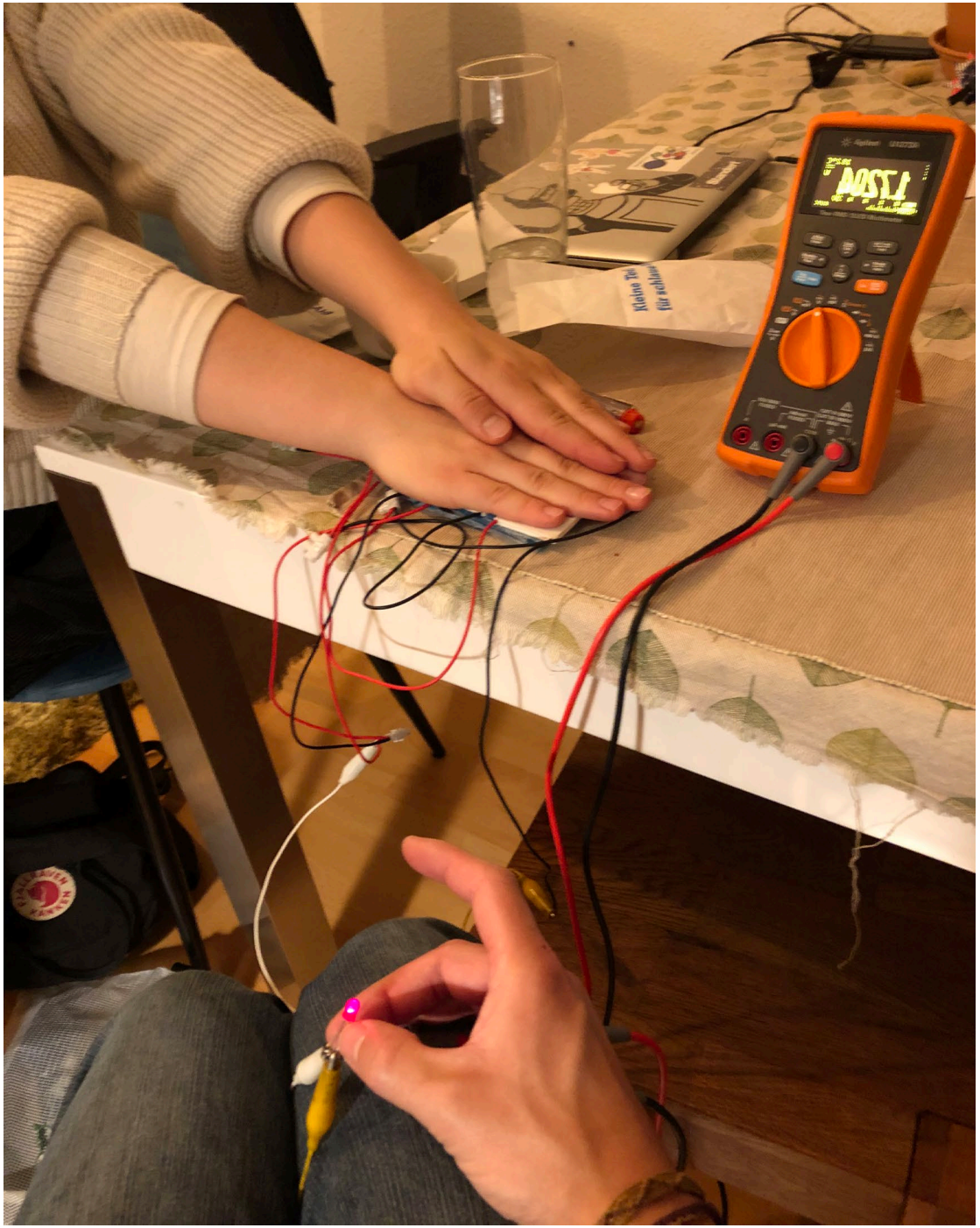


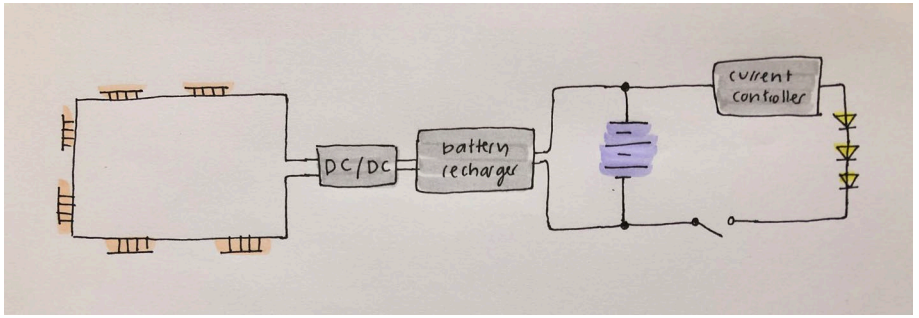
Klettband, Schläuche, Zipper

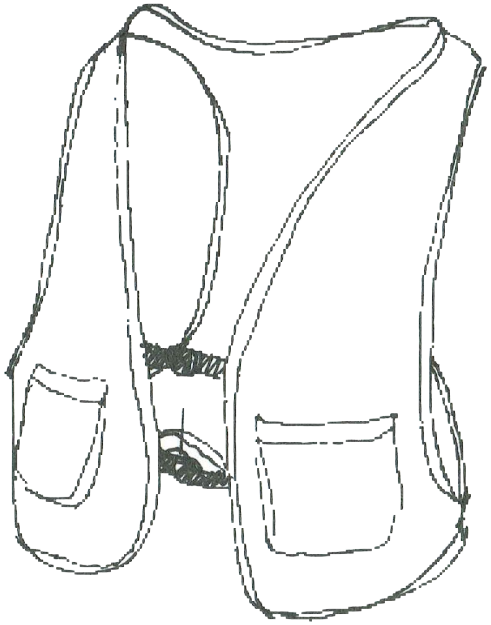
02 experiments

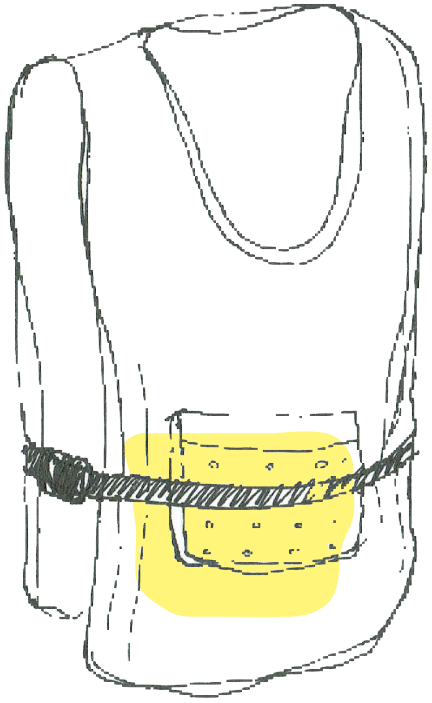


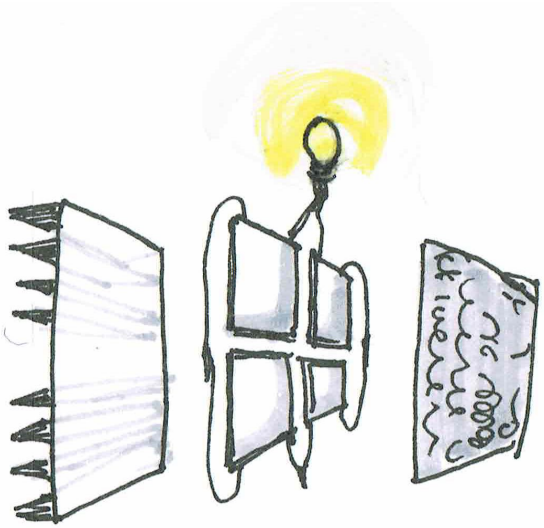
EXPERIMENTS AT NIGHT




DC/DC
battery
recharger
current
controller







fact

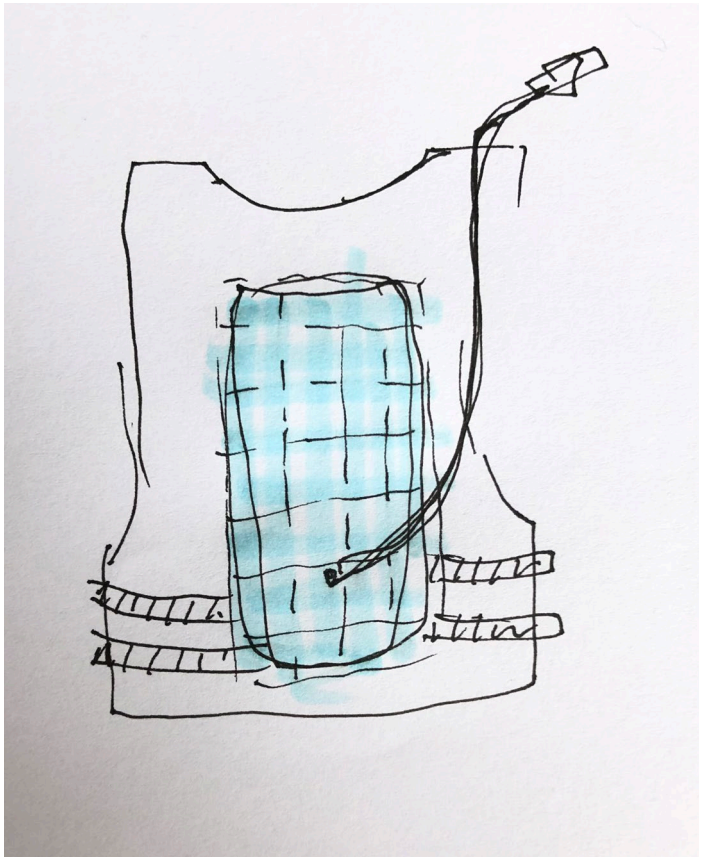
The human body produces heat, wich is a free energy source can be converted into electricity.

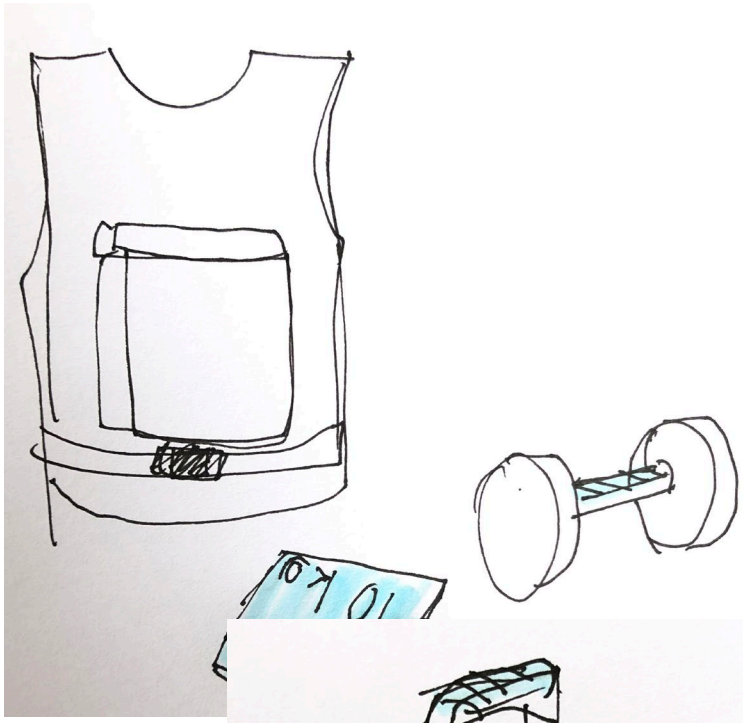
act

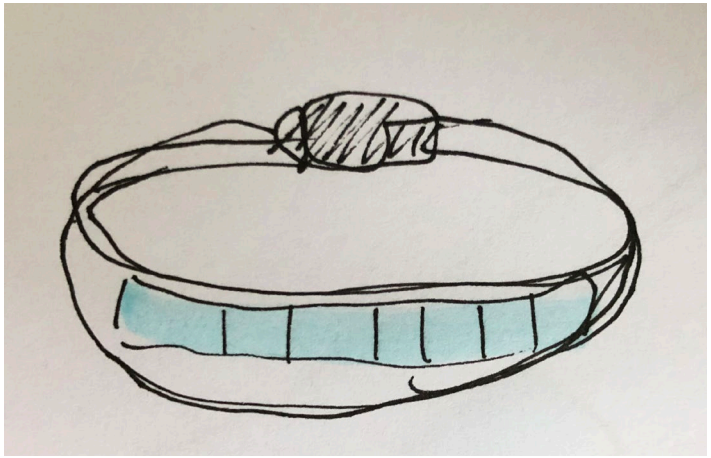
A bike handle and a running belt that use Peltier tiles to convert body heat into light. The urban human can self-sufficiently provide her own light at night.

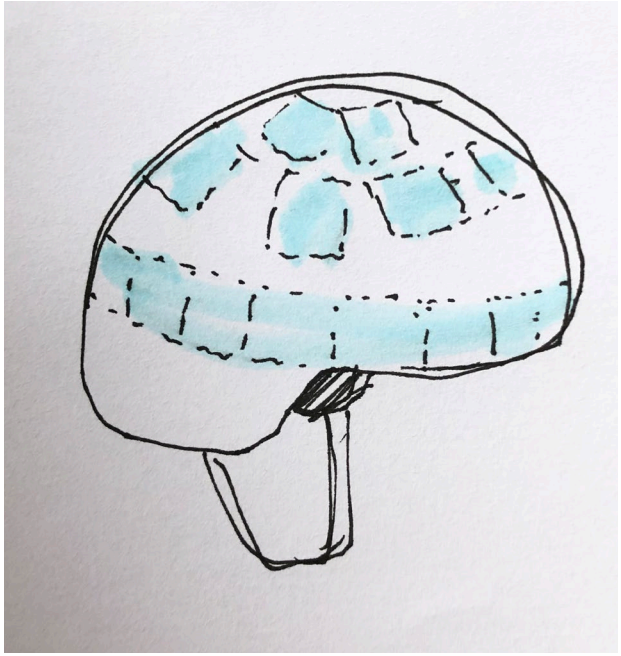
impact

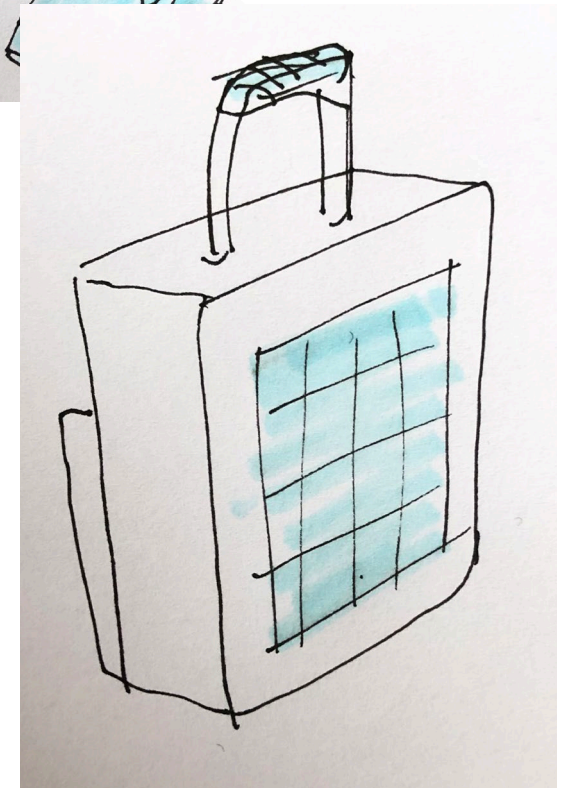
The urban human can self-sufficiently provide their own light at night.

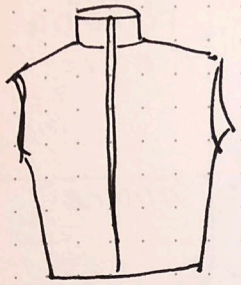






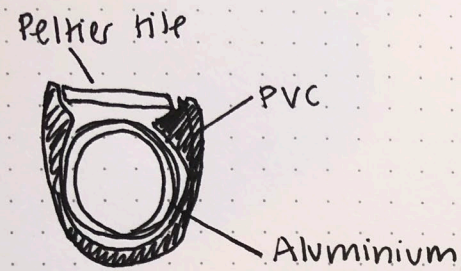




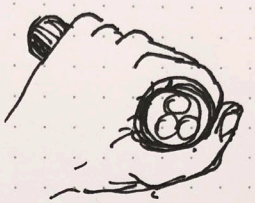


Weste

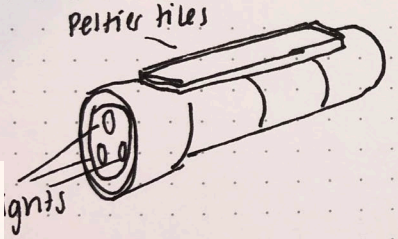
- wattiert für Isolierung
- kühlende Stoffe
- leuchtende Stoffe
- dazu Taschen für Packs mit Peltier
- evtl. Wasserblase, etc.

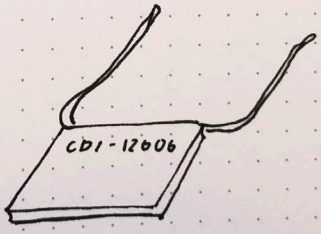


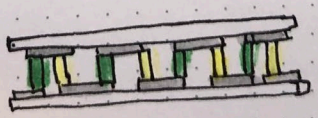
57 milliwatt from heat of hand

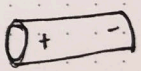


Only 0,5 milliwatt necessary to light an LED





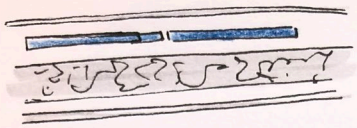


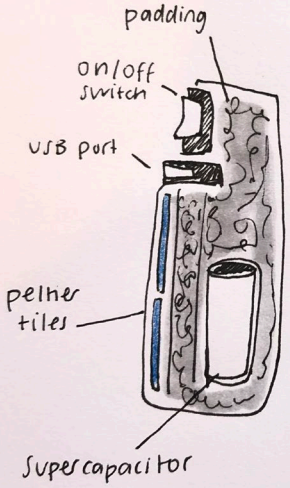


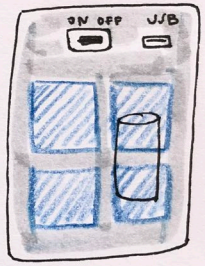
AA battery

~3.9 kWh

- 400-720 kWh
- 600-800 kg CO^2 in production

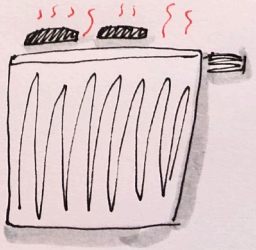




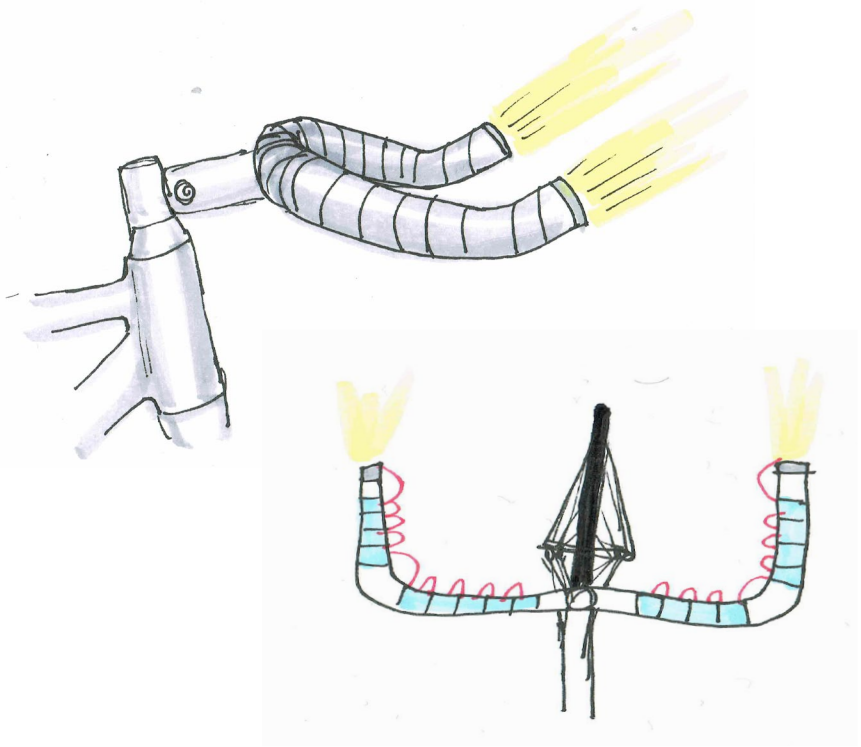


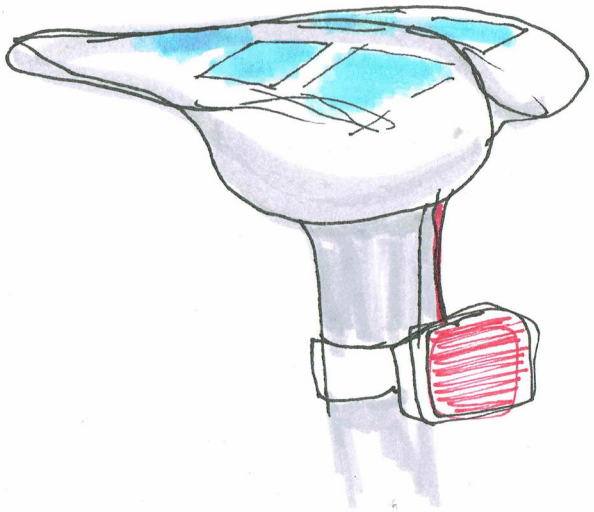
pre-heating packs

pre-heating packs

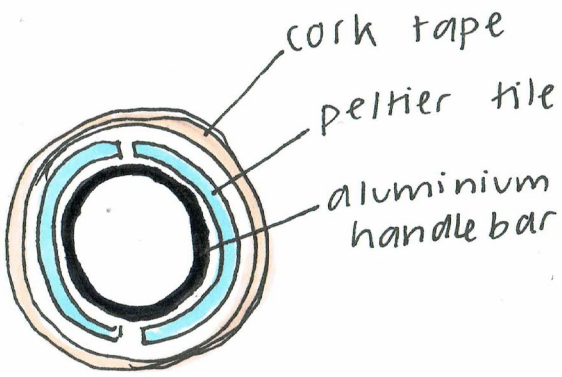


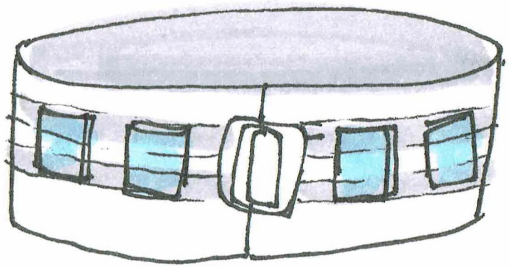
03 design

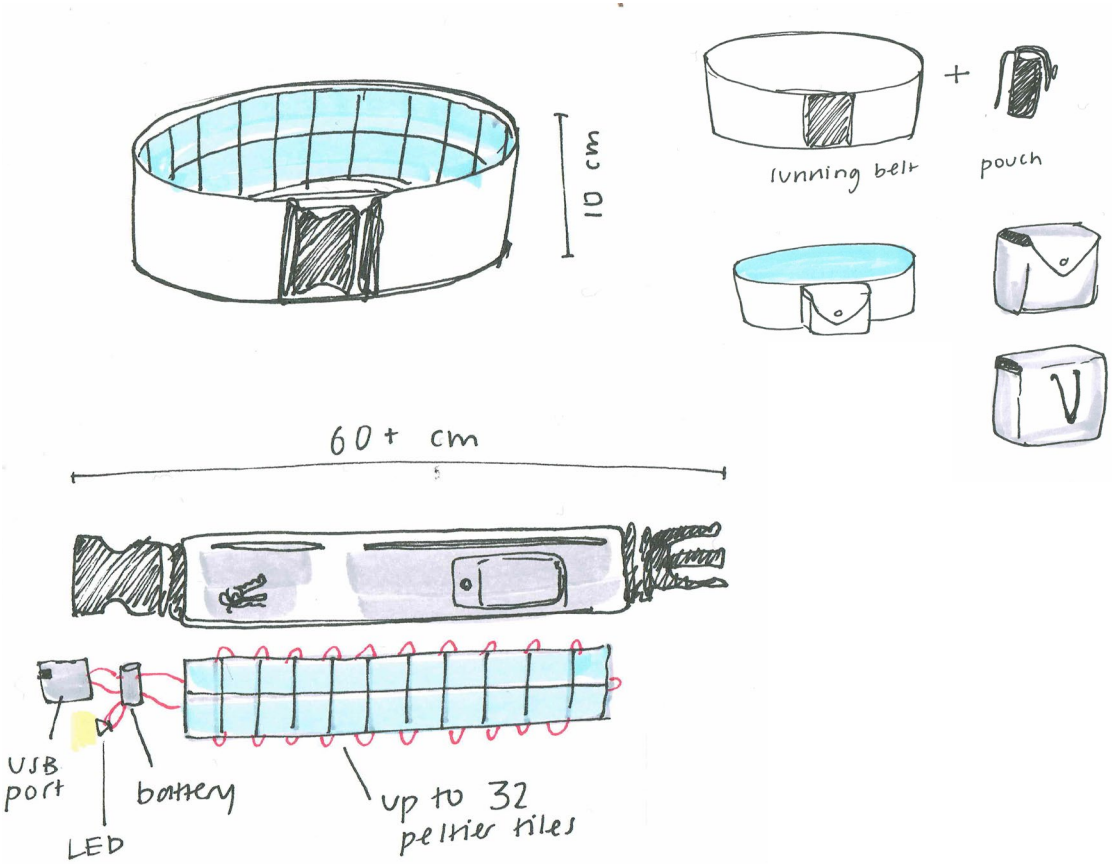




4 - 6 Peltier tiles per saddle







Material

-polyamerid
-tech textiles to absorb heat
-zipper, buckle, extra pouch
-up to 32 Peltiers
-DC/DC converter, battery, USB port, LED

Usage

-Outdoor sports
-Biking
-on the go
-phone charger

RUNNING BELT

FANNY PACK

BELT

BELT + POUCH

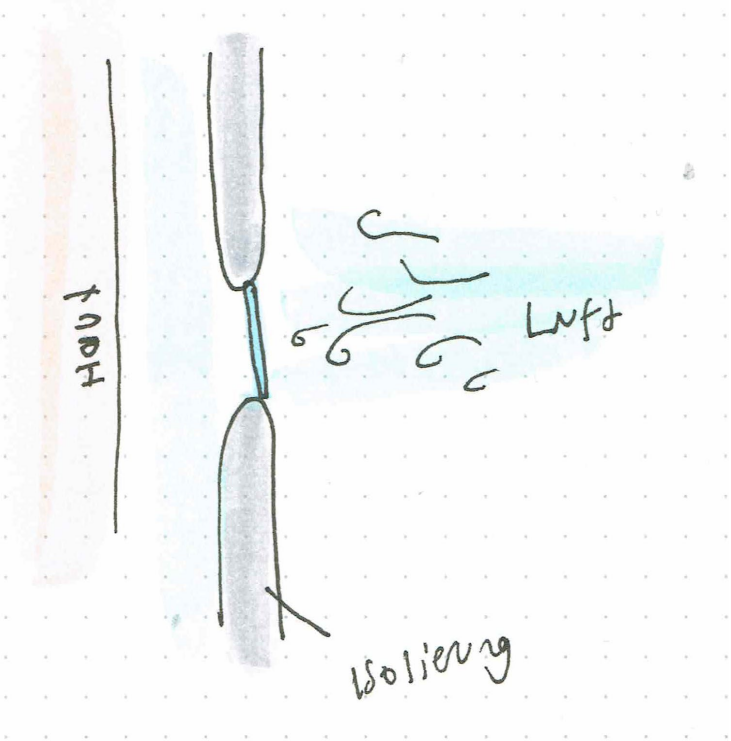
04 detailed research

Prof. Dr. Karl Meier

- creating a heat circle
- insulation: enclosed air
    - the thicker, the more effective
    - wool or (artificial) dauns
- loose, insulated garnment to trap air
    - elasticated wrist and ancle
    - artificial textiles
- holes on both sides of Peltier tile
    - few effective tiles or a lot of semi-effective tiles?
    - no cover over tile
    - air as best insulation
    - frame to hold it in place
    - venetian blind to regulate warmth
- torso as the warmest body part, cools off the most
- headwind cools down even more
- velcro with silver coating as conductor
- Where is it comfortable to wear?

Works with gloves?

- enclosing air to conduct heat
- wool: great insulator
- leather: takes longer to warm up, stores heath longer



Two bike lights?

§ 67 Lichttechnische Einrichtungen an Fahrrädern (StVo)

1. Fahrräder müssen mit einem oder zwei nach vorn wirkenden Scheinwerfern für weißes Abblendlicht ausgerüstet sein.
2. Der Scheinwerfer muss so eingestellt sein, dass er andere Verkehrsteilnehmer nicht blendet.
3. Blinkende Scheinwerfer sind unzulässig.
4. Fahrräder müssen mit mindestens einem nach vorn wirkenden weißen Rückstrahler ausgerüstet sein.

Schlussleuchte und Rückstrahler dürfen in einem Gerät verbaut sein.

- two front lights are legal
- direction of lights slightly downwards
- one or two back lights
- can be integrated into bike construction

Impact of dynamos?

Disadvantages of dynamos
- braking loss (1km/h with 20km/h speed)
- higher weight
- loud noise
- semi-effective in rain, snow, etc.

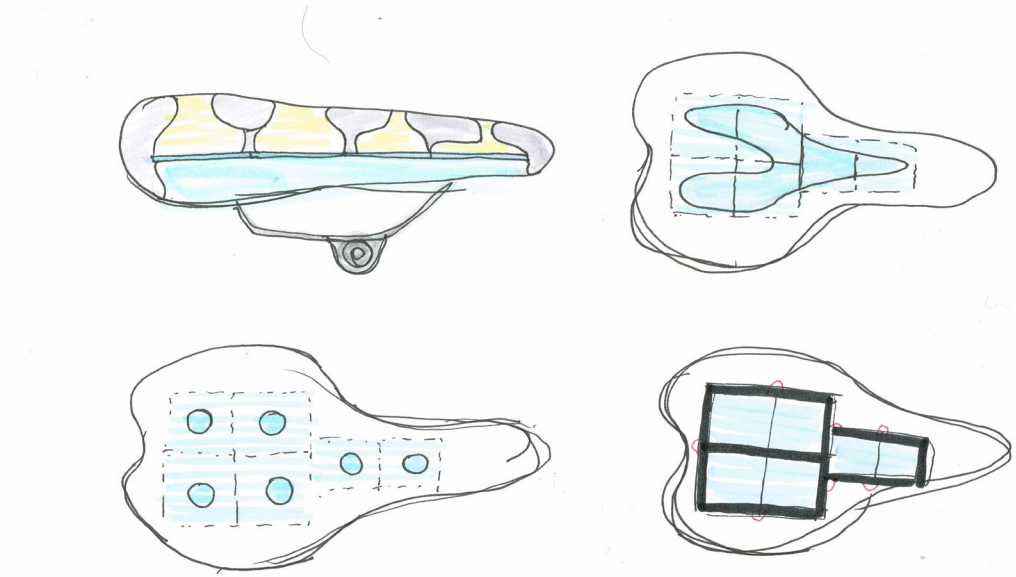
Impact of batteries?

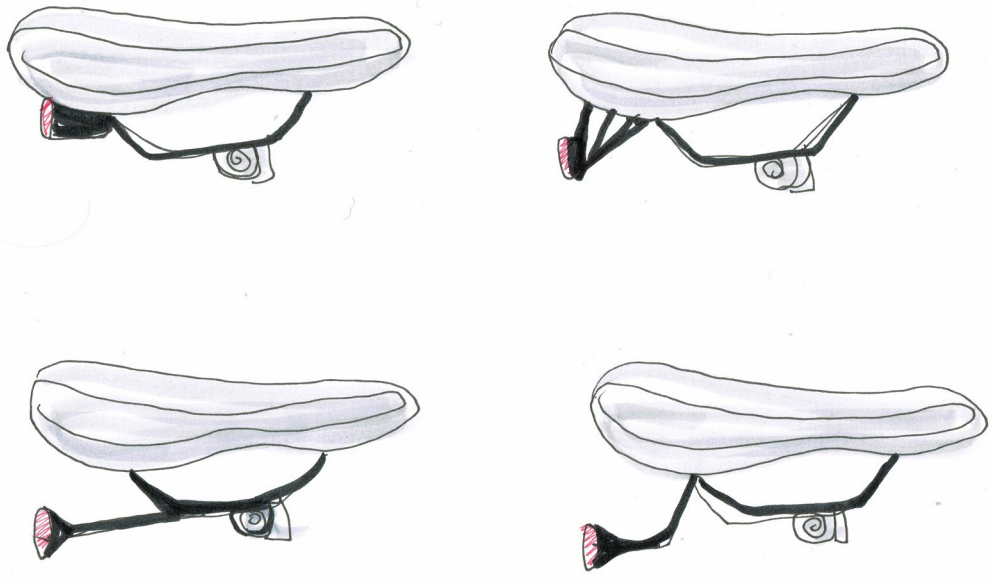
Disadvantages of dynamos
- 1 kWh storage capacity produces 125kg Co2

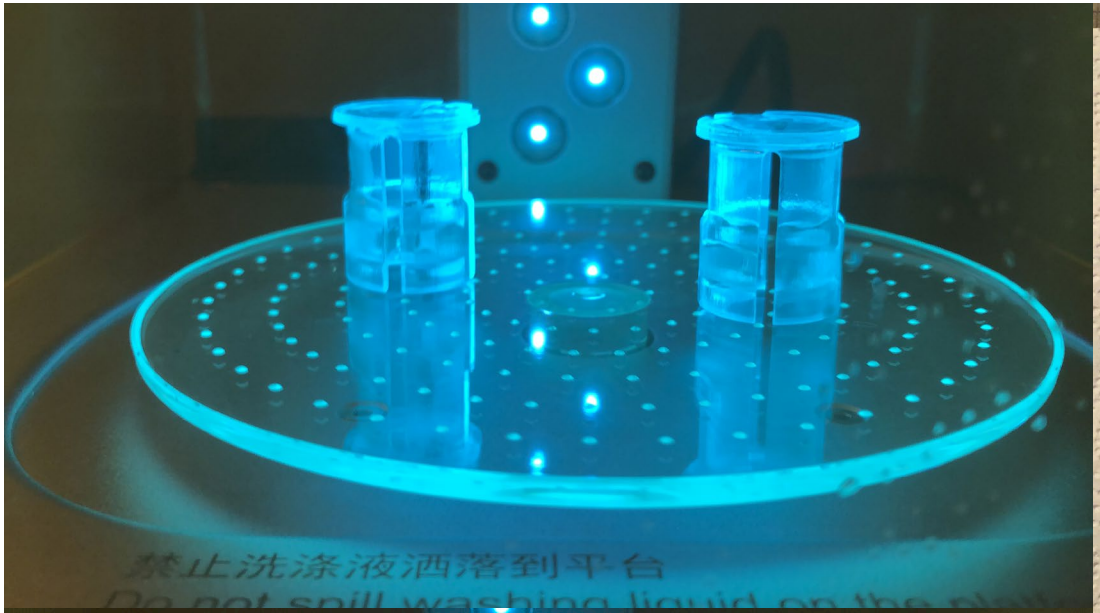
1 kWh = 250 AA batteries

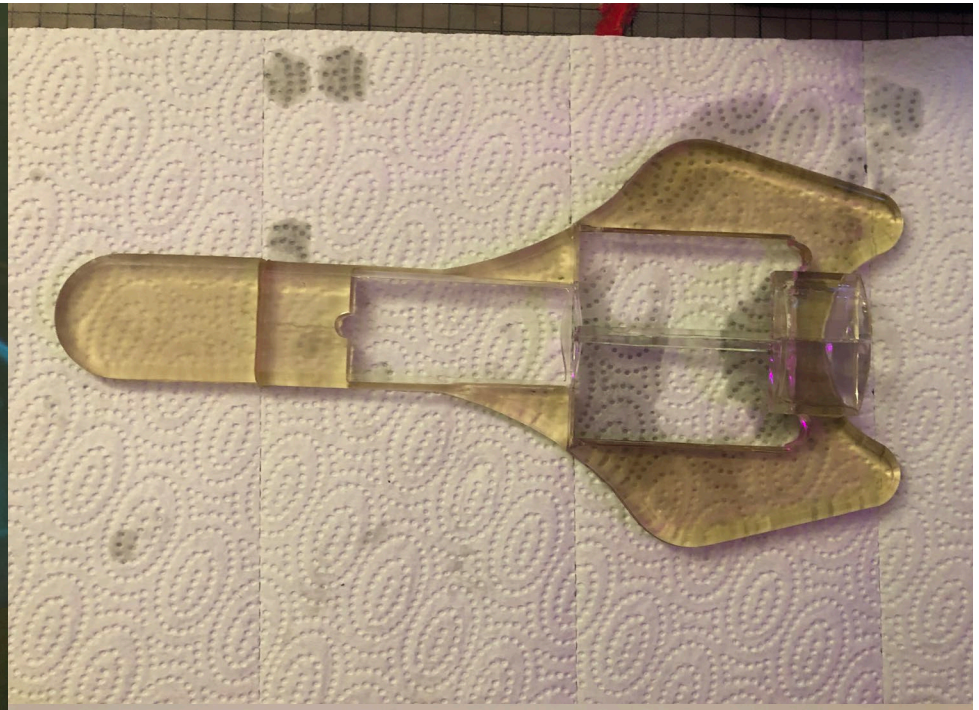
- Akkus/storage of energy always greener and more efficient

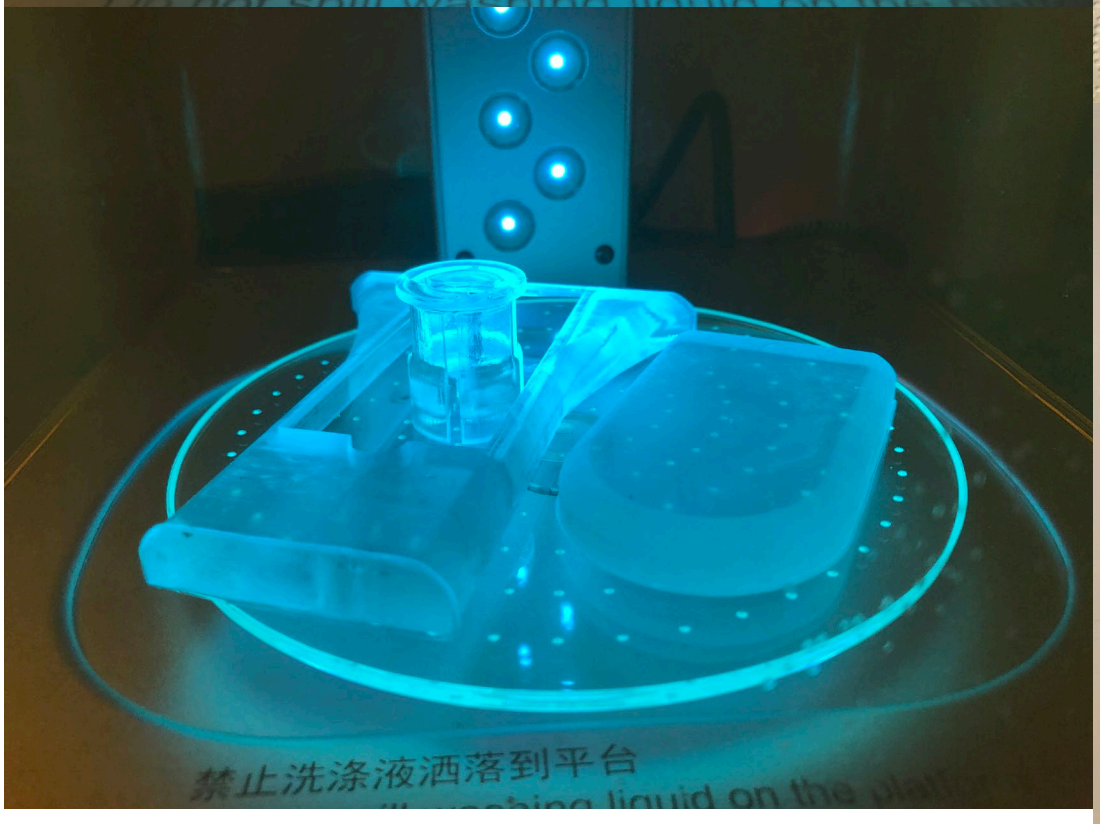
05 mock ups & models






禁止洗涤液洒落到平台

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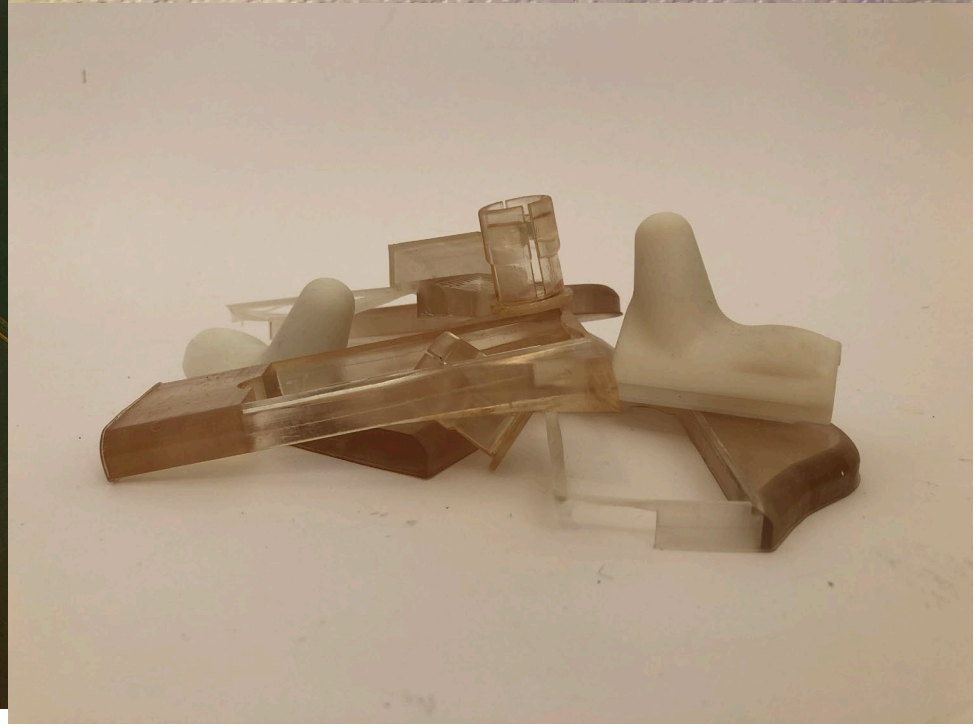

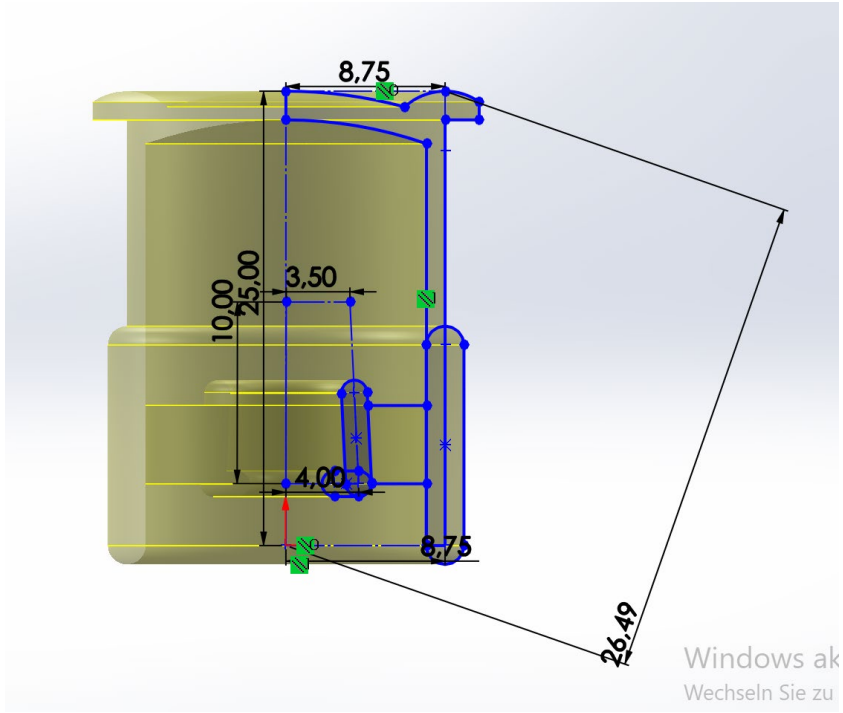
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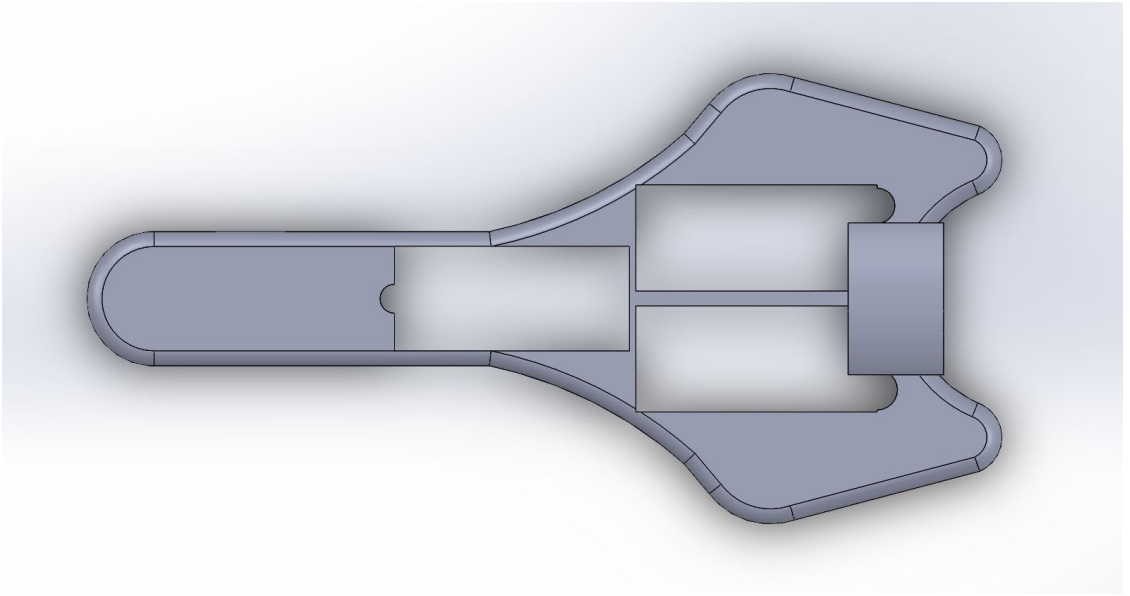
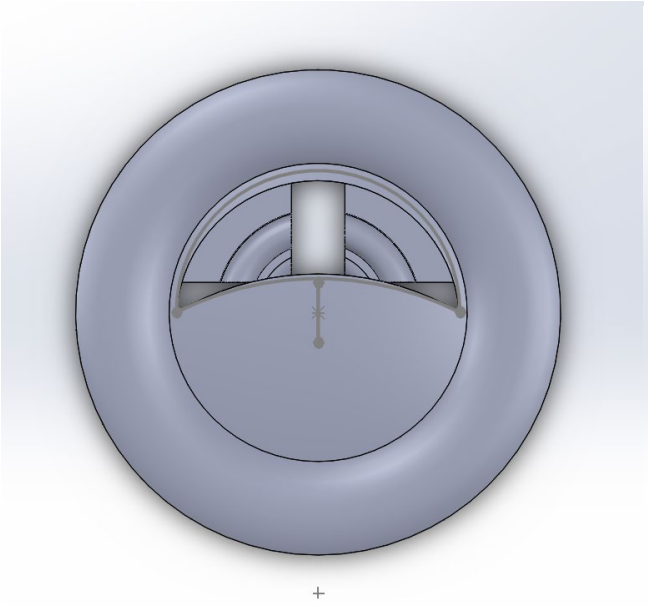
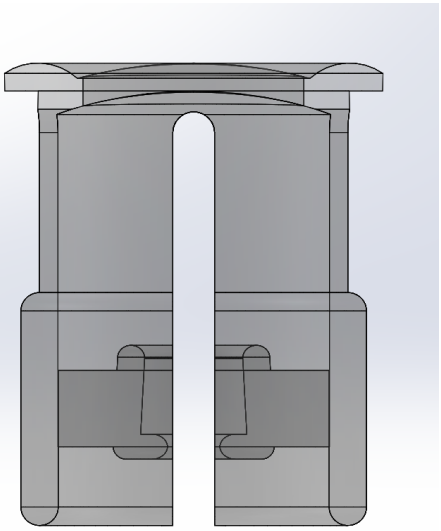
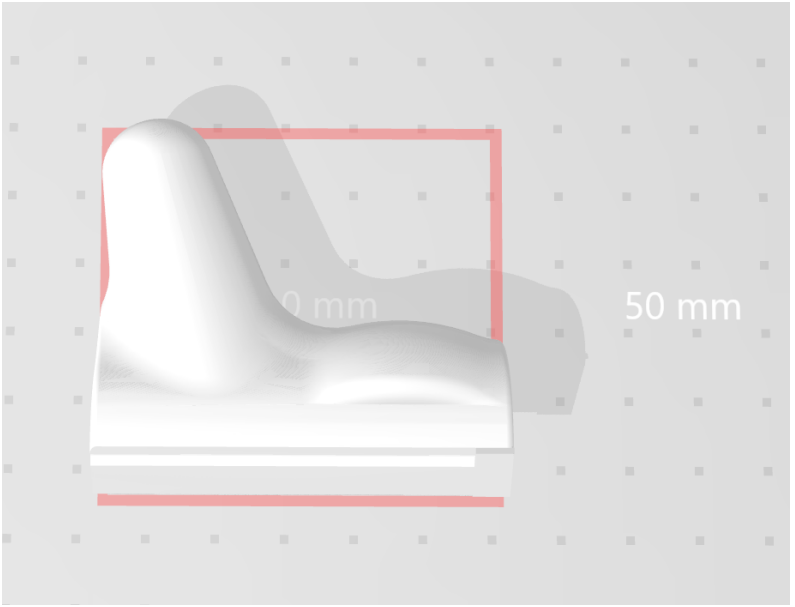
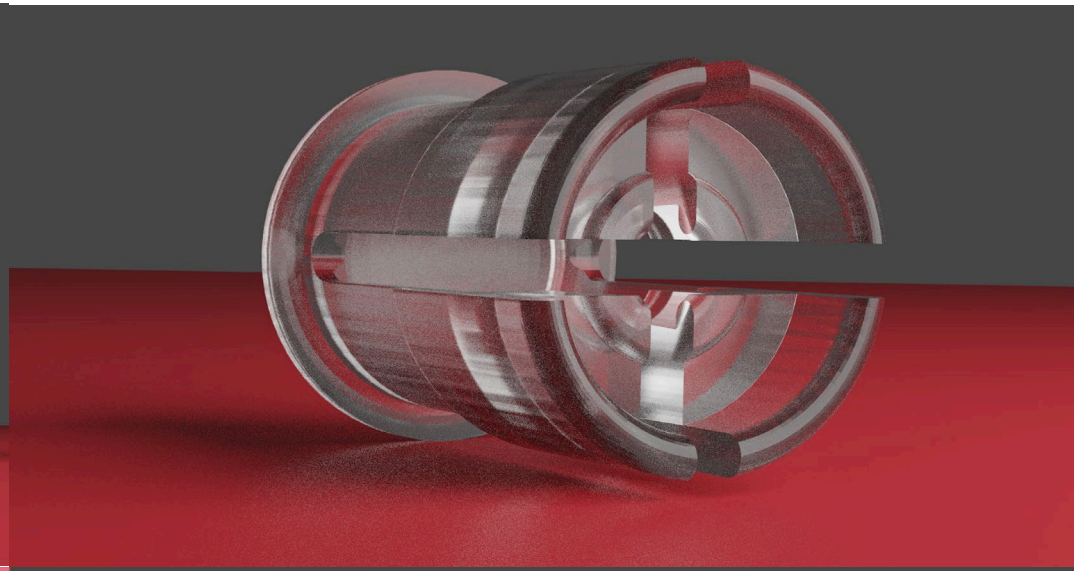
26,49

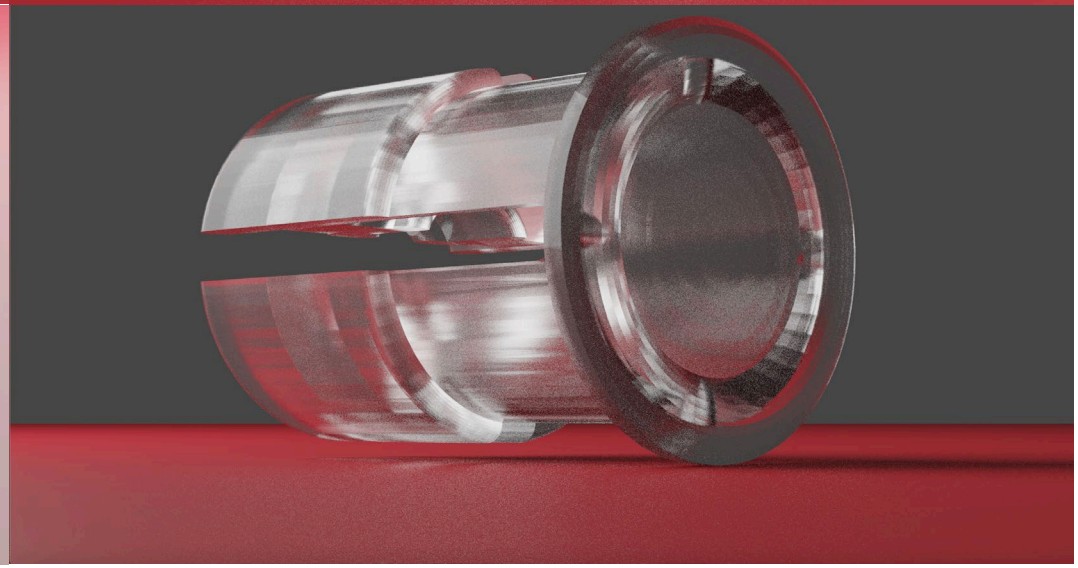




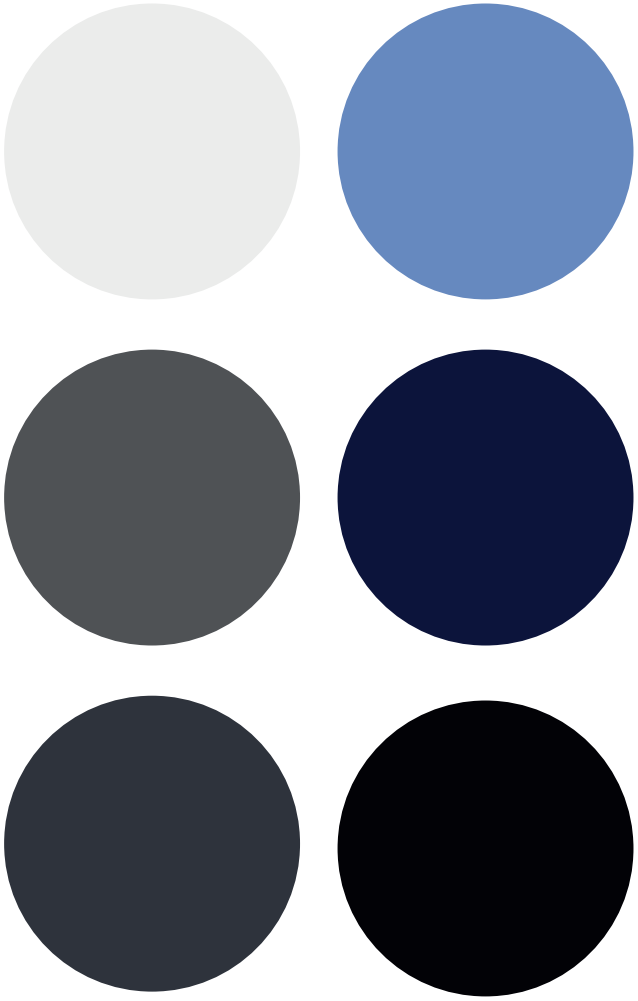


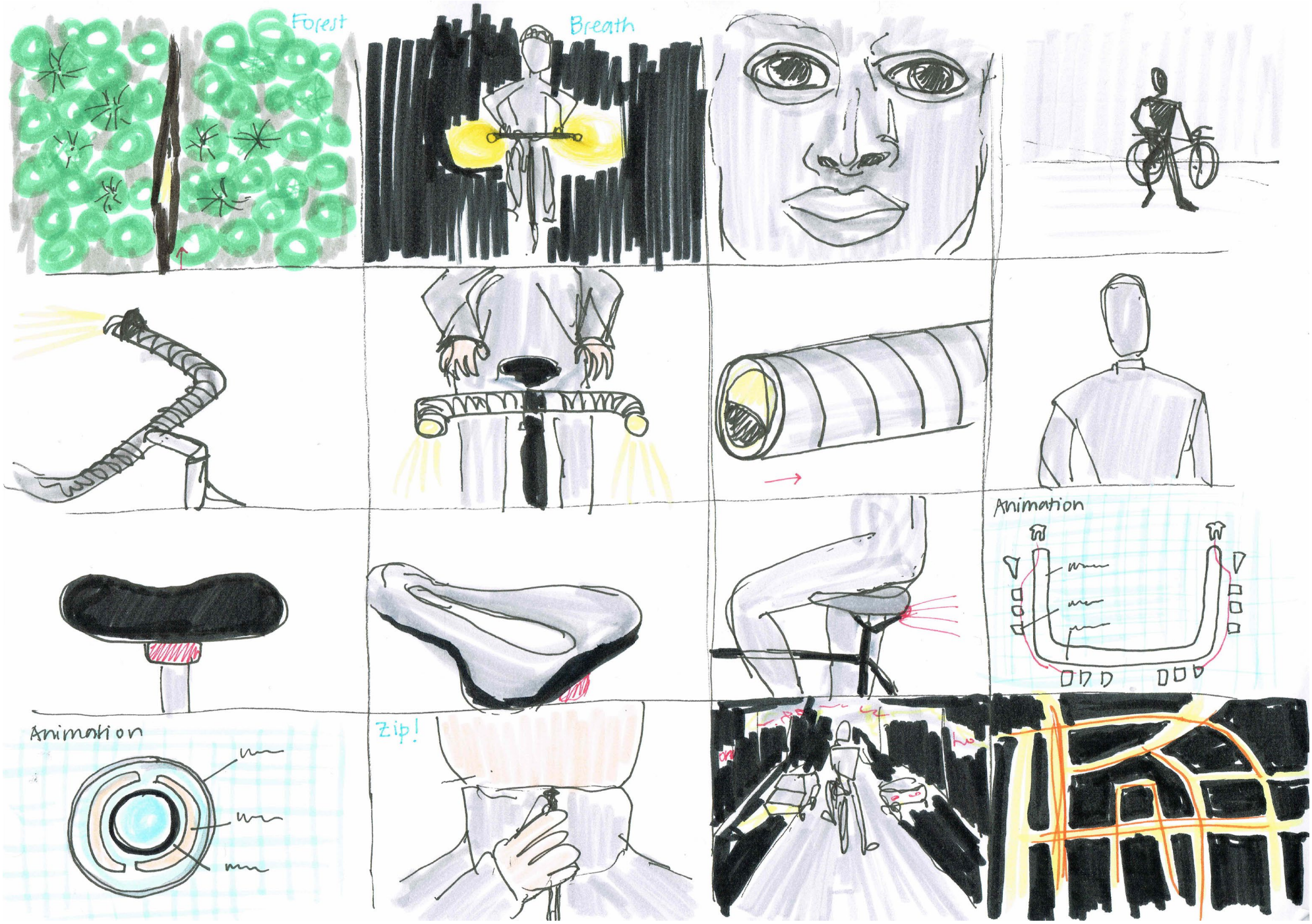
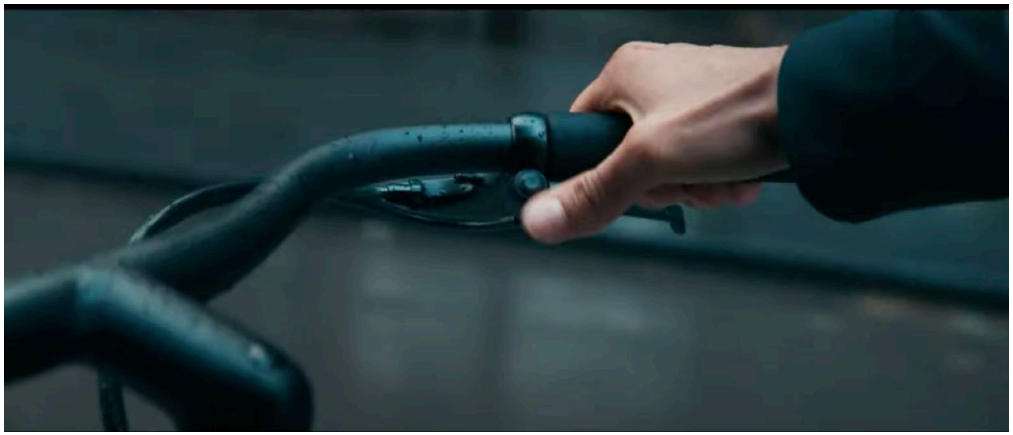
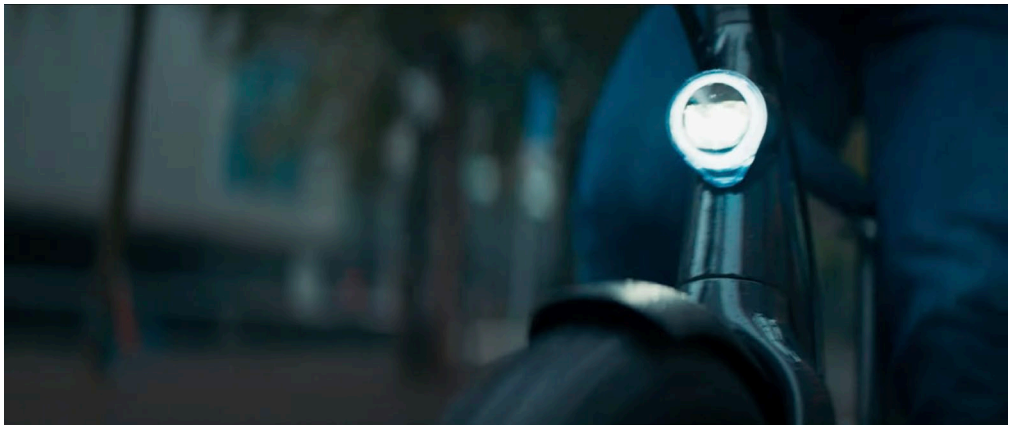
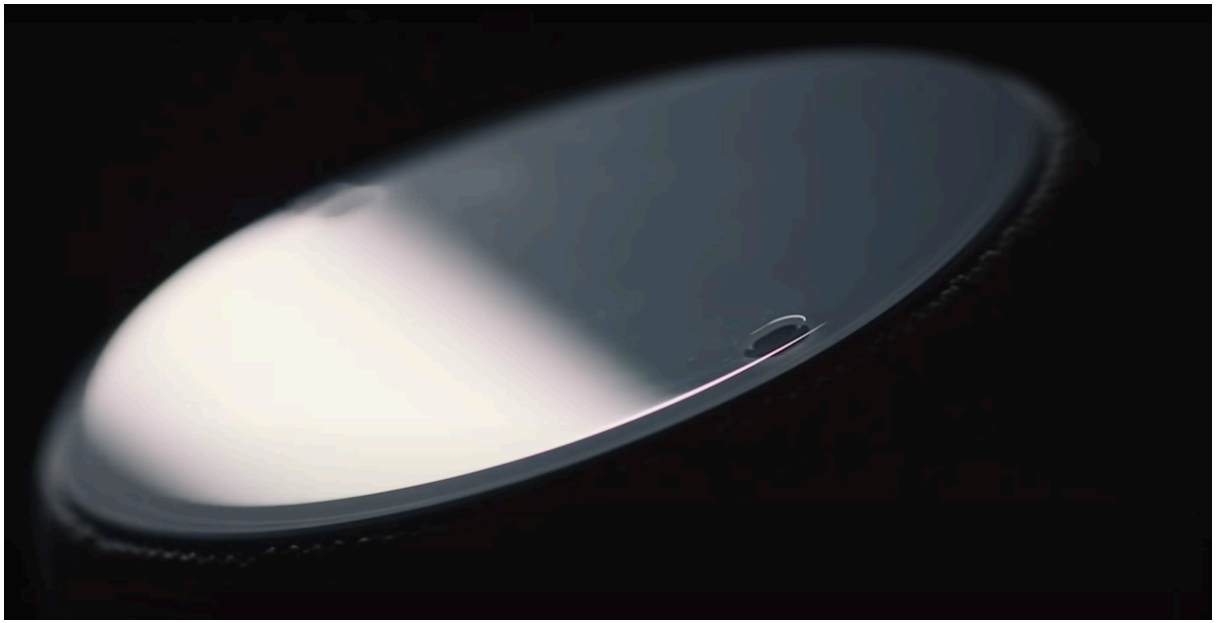
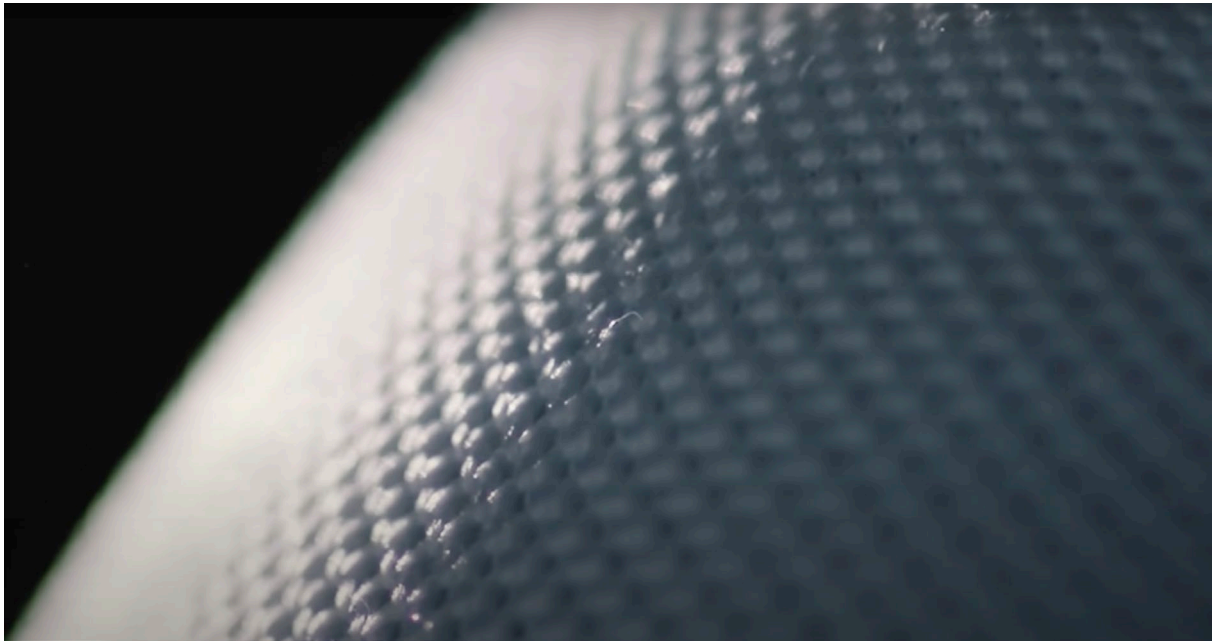

0 mm
50 mm





06 film




Forest
Breath
Animation
Animation
Zip!