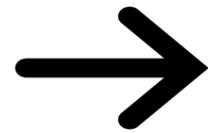
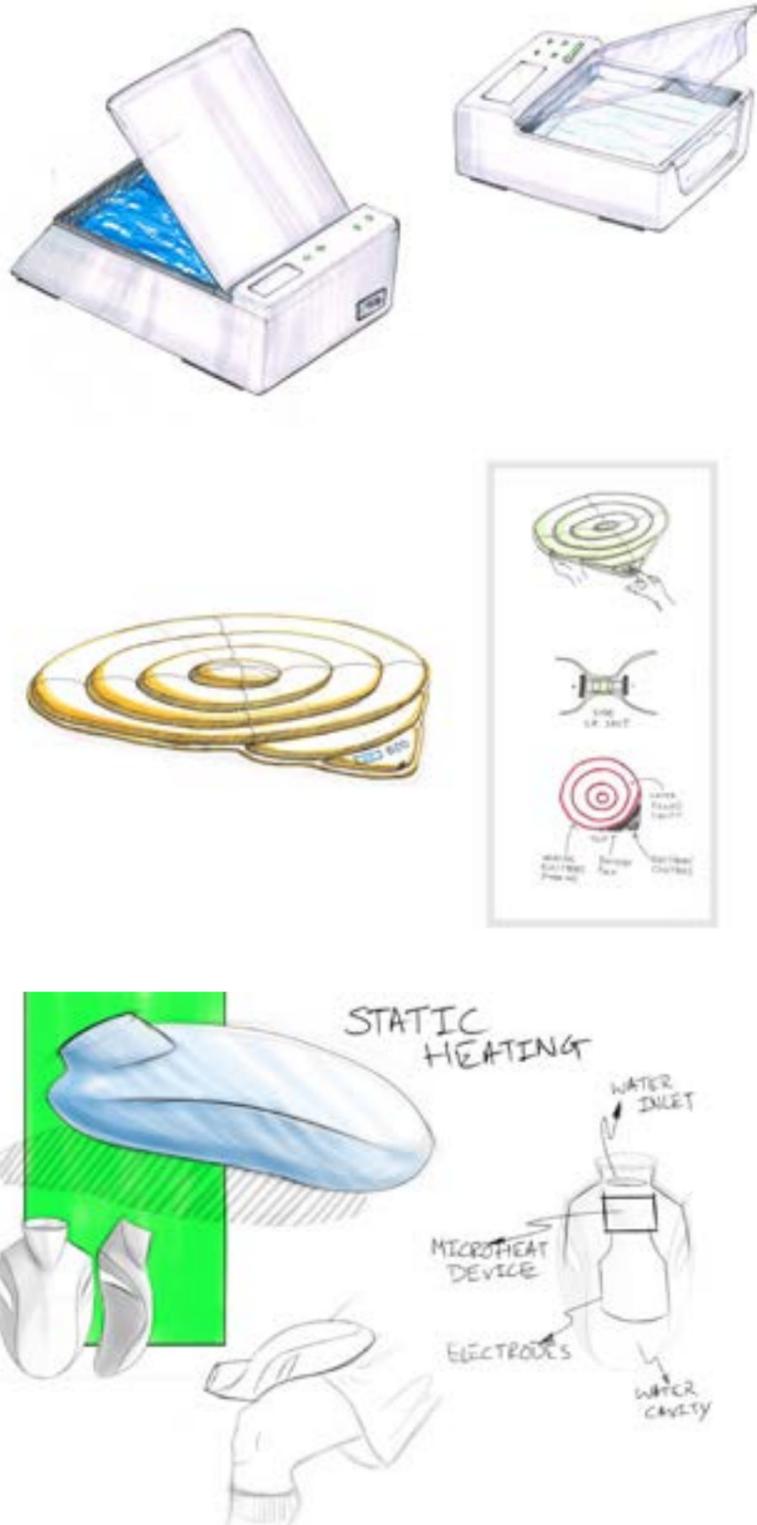


Microheat Project

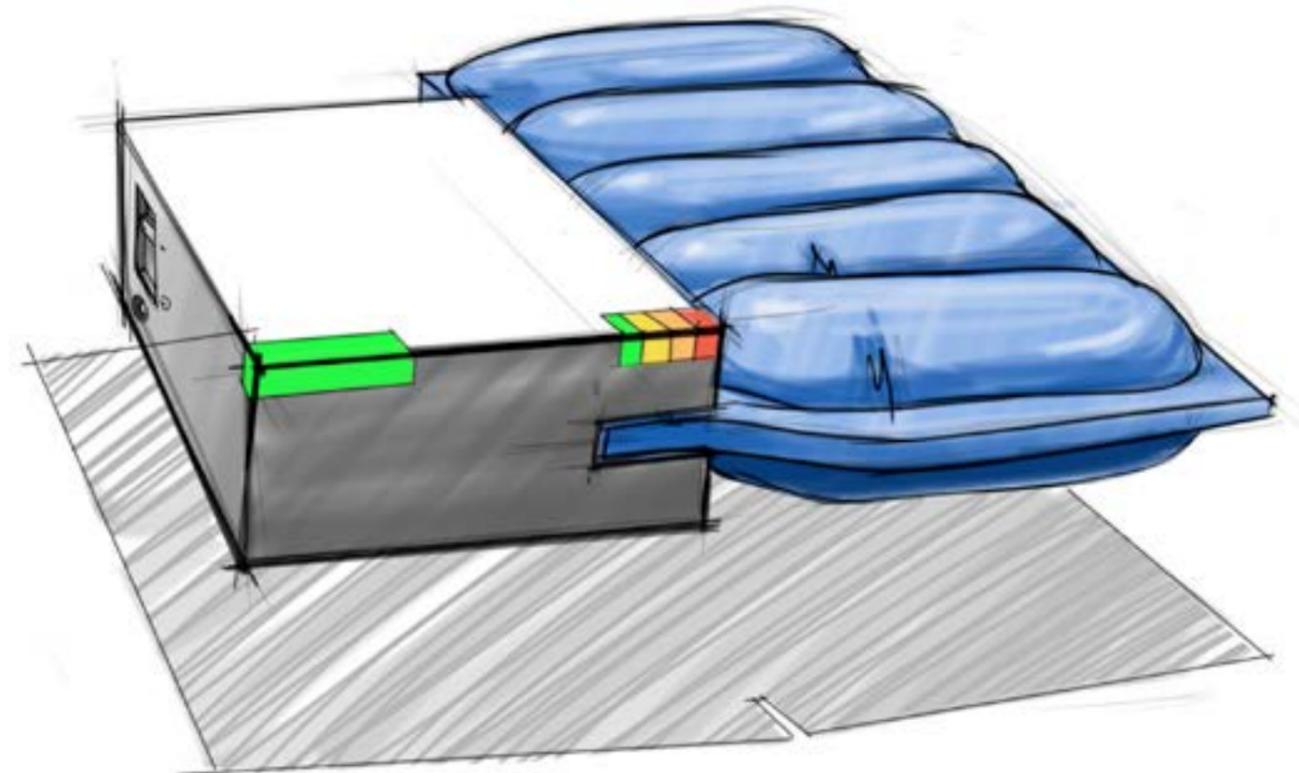
Concept visuals

Original concepts



Combine Advantages:

- Re-usability
- Incorporating microheat technology in existing products
- And portability



Target market



Location



Sore muscles and joints



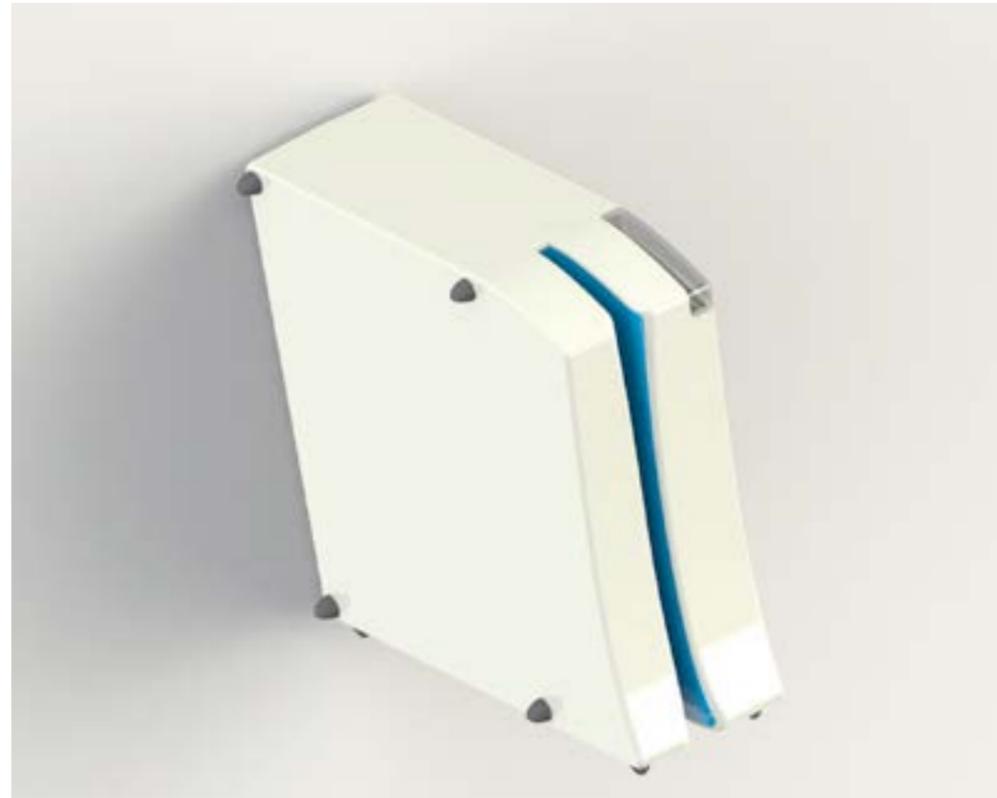
Heat therapy - applying heat to areas that are injured or sore.

Heat applied to affected area, increases blood flow to the area, which soothes aches and pains and accelerates the healing process while relieving pain

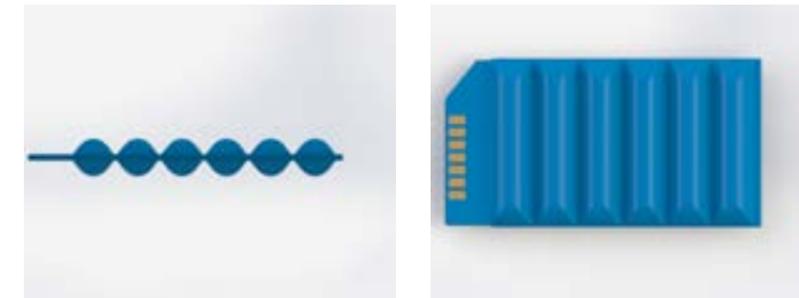
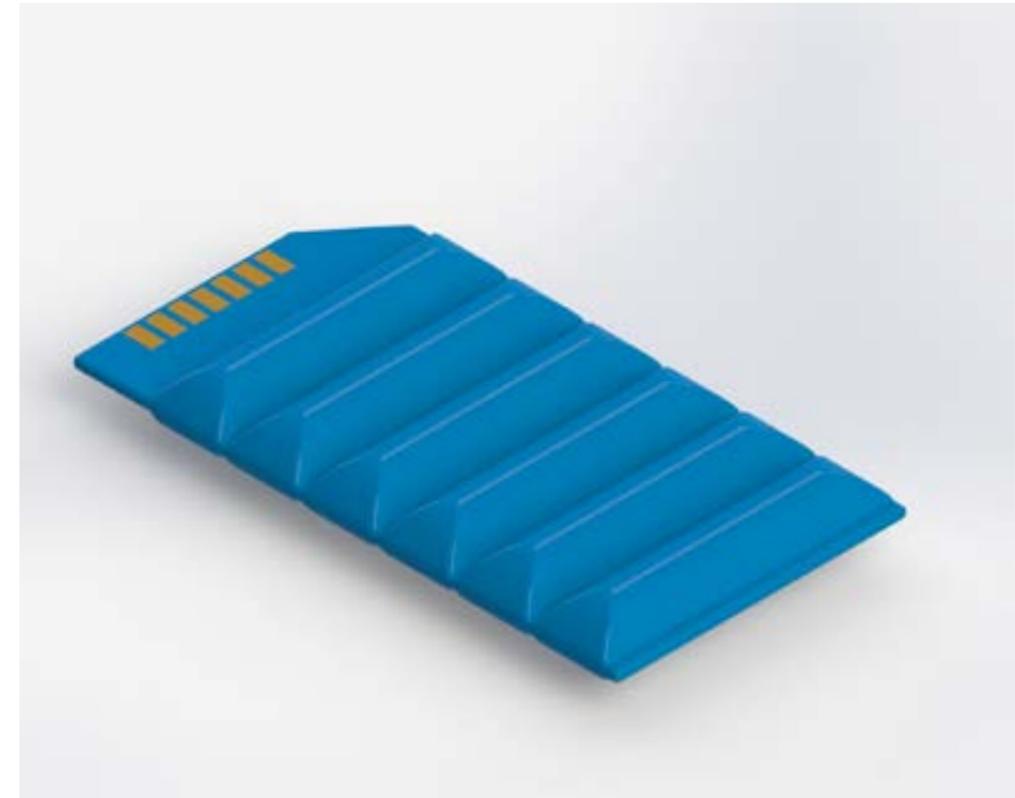


- Heat packs are useful for heat therapy - but easily damaged and then thrown away
- Don't stay hot long enough
- Annoying process to heat!

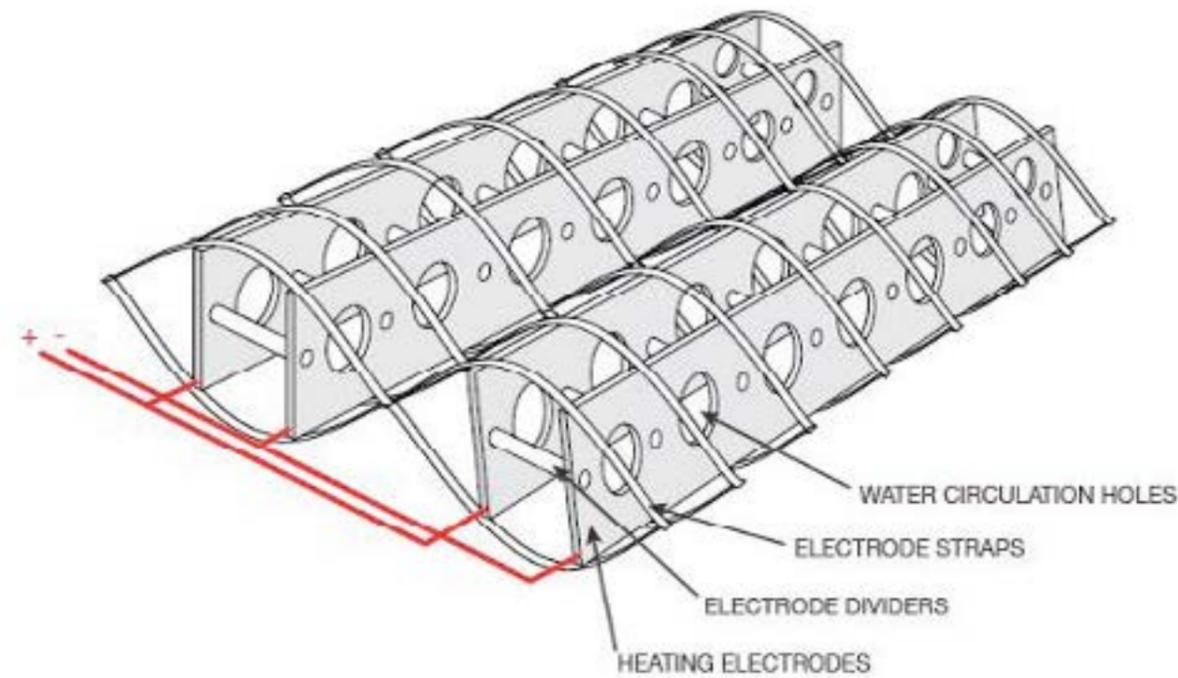
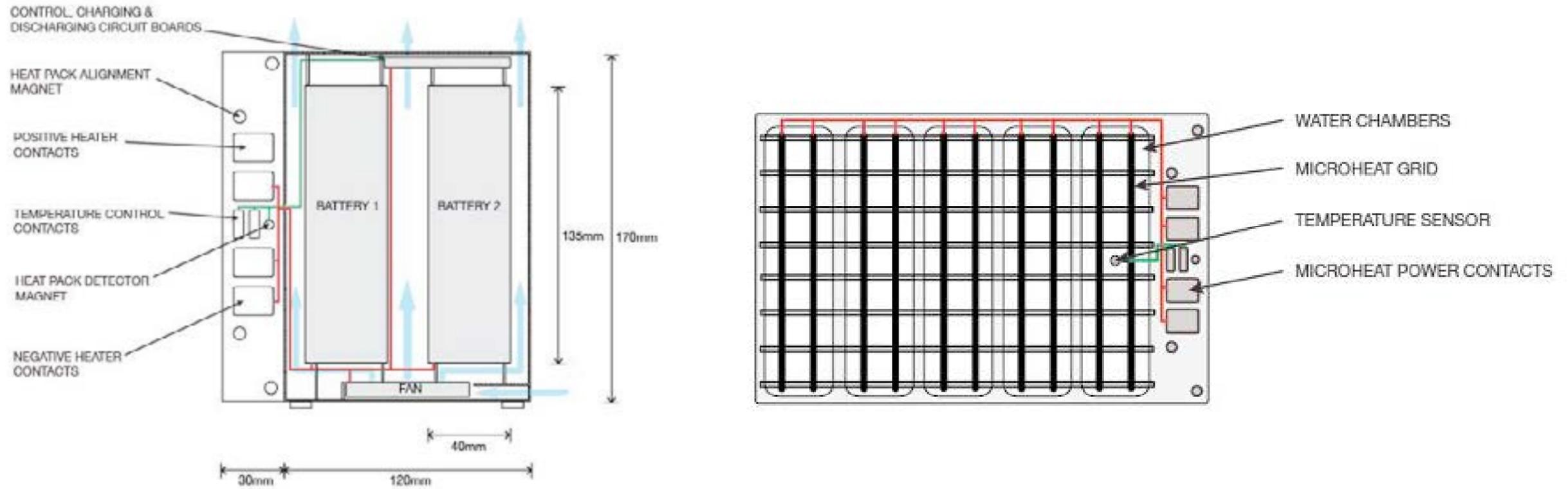
Heating Device



Heat Pack



Concept Technical

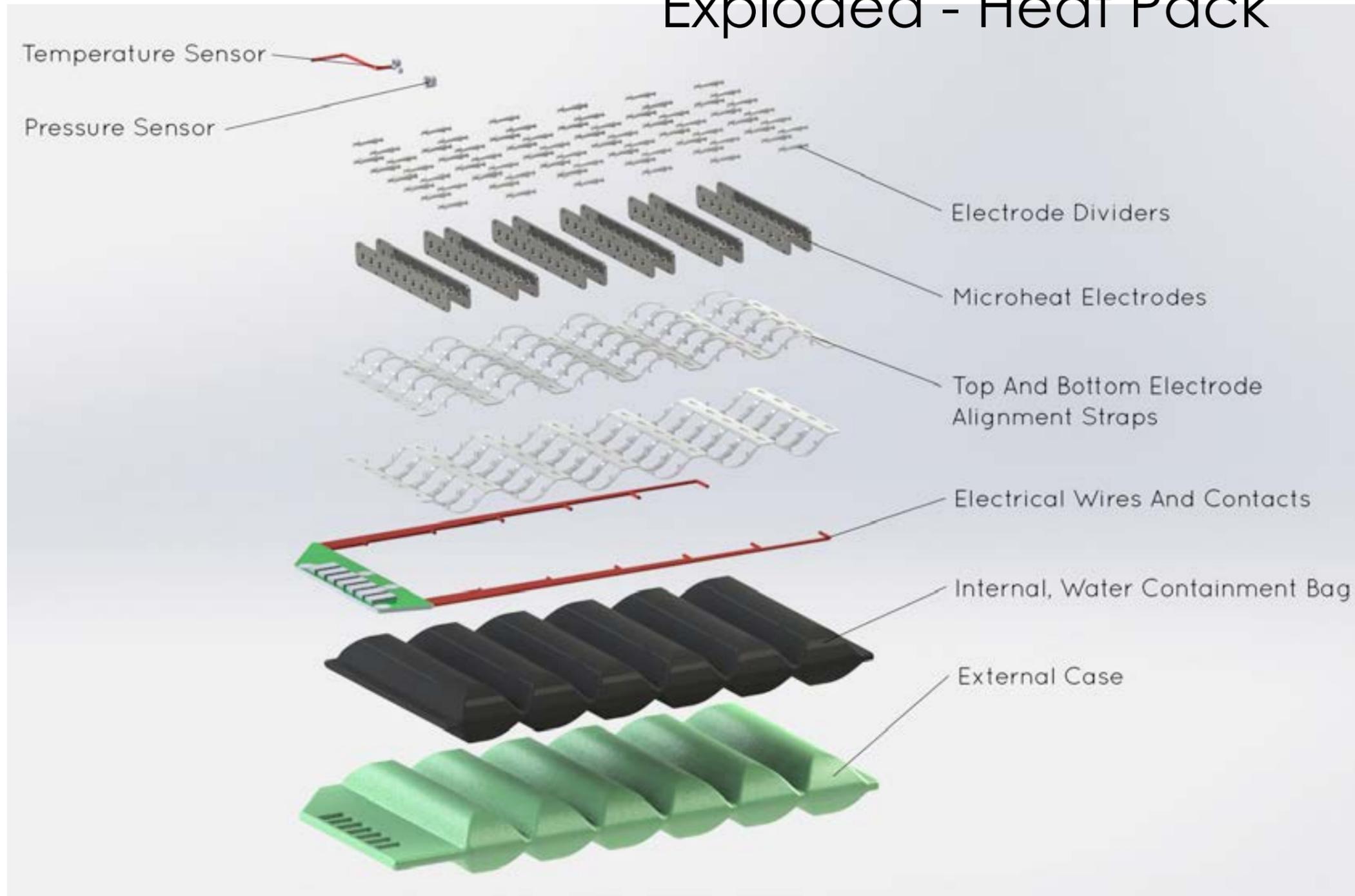


Exploded - Heating Device



Bill Of Materials					
No:	Name:	Description:	Material:	Manufacturing Process:	QTY:
1	Mains Power Connector	Connects device to mains power for charging and heating.	Misc. With PVC shell		1
2	Li.Po. Batteries	High capacity and discharge rate batteries for heating the heat pack.	Li.Po		2
3	Cooling Fan	Cools battery pack and transformer while in use.	PVC		1
4	Rubber Feet	Provides soft, non grip, support for the heating device whilst hiding screw holes.	Rubber		8
5	Left Hand Outer Casing	Heating device outer shell.	ABS		1
6	Right Hand Outer Casing	Heating device outer shell.	ABS		1
7	Indicator Screen	Displays information to the user regarding charging and battery states.	Polycarbonate		1
8	Indicator LED Board	Displays information to the user regarding charging and battery states.	PCB board.		1
9	Charge and Heating Control Circuit Board	Primary circuit board for control of: - Battery charging - Microheat unit on/off. - Device safety check	PCB board.		1
10	Contact and Heat Pack Alignment Board	Transmits electricity to heat pack as well as holding it in place.	PCB with Aluminum connectors.		2
11	Heat pack Slot Piece	Slot which contains heat pack to heater interface.	ABS		1
12	Charging Transformer	Charges batteries.	Misc. With ABS shell.		1

Exploded - Heat Pack



13	Temperature Sensor	Monitors heat pack temperature.	Misc. With ABS shell.		1
14	Pressure Sensor	Monitors heat pack water pressure	Misc. With ABS shell.		1
15	Electrode Dividers	Holds Microheat electrodes firmly in place	ABS		72
16	Microheat Electrodes	Heats water.	Stainless Steel		12
17	Top and Bottom Electrode Alignment Straps	Suspends Microheat electrodes in the center of the water chamber.	Polypropylene		2
18	Electrical Wires and Contacts	Supplies power to the Microheat device	Copper & Misc.		1
19	Internal Water Containment bag	Holds Water in a sealed bag.	PVC		1
20	External Case	Protects internals from damage and punctures.	Nylon Coated PVC		1

Detail and Section Views

Intuitive LED indicators



Uniquely designed mains port



Heating Device Section View



Grills and Vents for Airflow



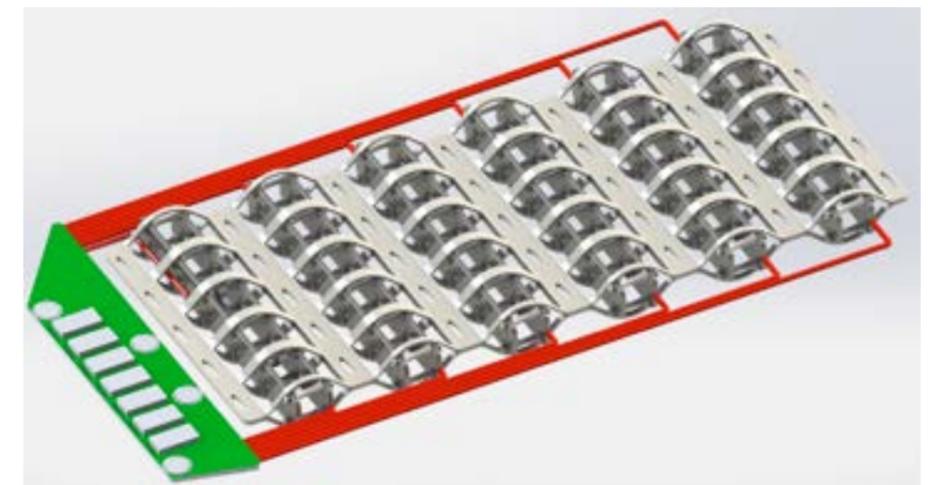
Unique Contact Port with concealed Alignment Magnets



Heat Pack Section View



Caged Electrode Layout

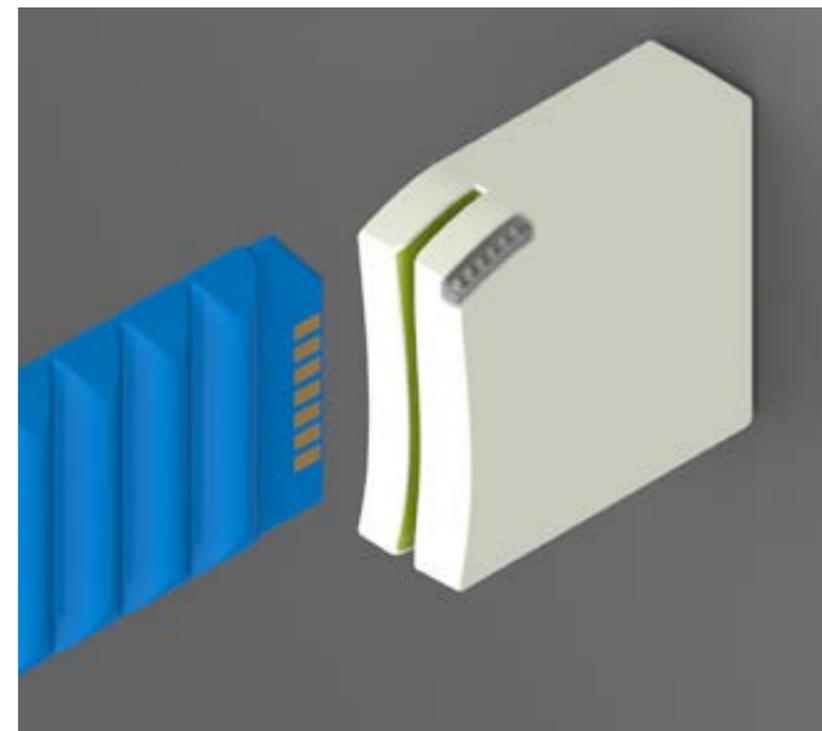
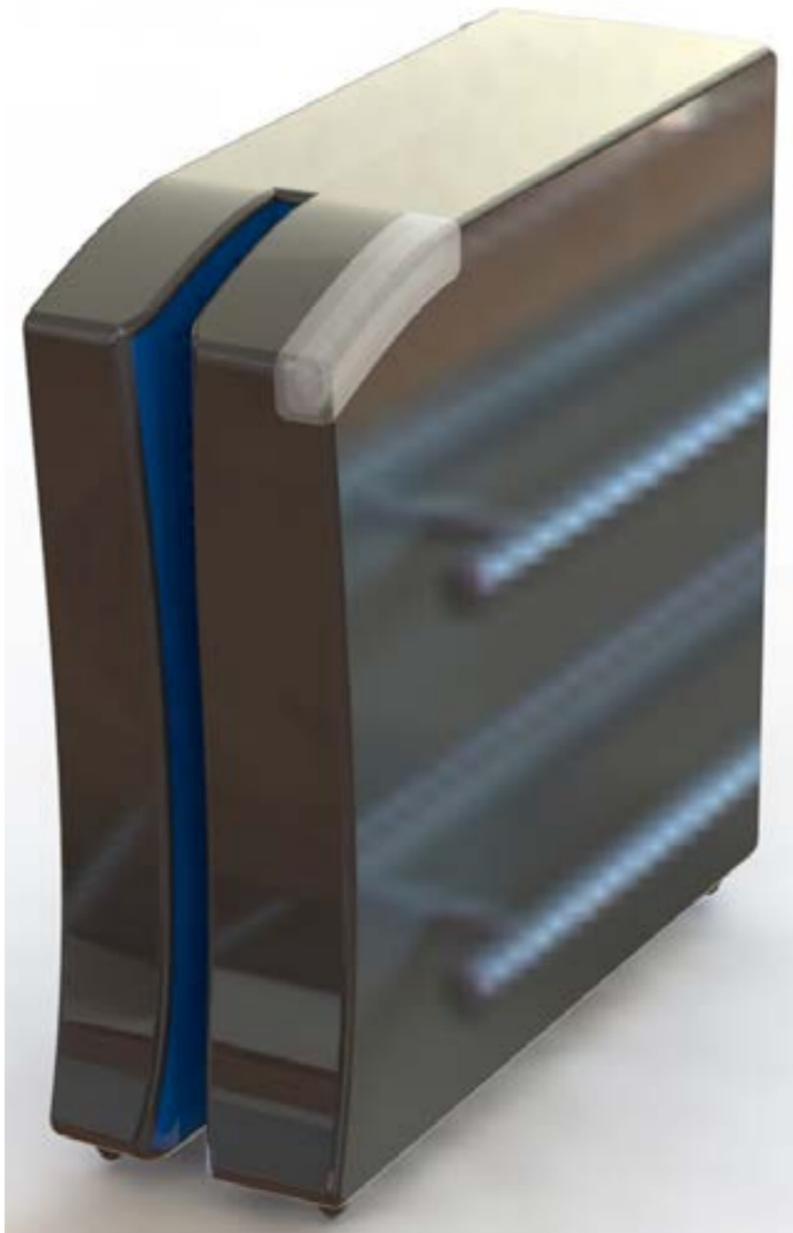


Environmental Study

To analyse sustainability and environmental factors we used greenfly and LIDs wheel.

We have considered the LCA in this presentation.

- Materials and Processes
- Transport and Use
- End of Life



Materials & Processes

- Minimal and appropriate amount of materials used.
- Mostly recycled and recyclable materials



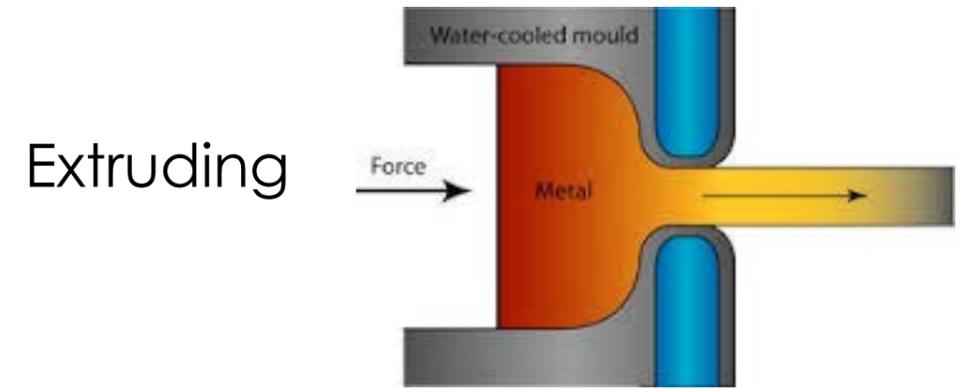
Nylon coated PVC



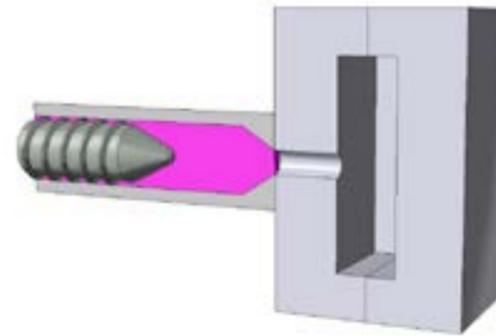
Raw ABS



Raw PP

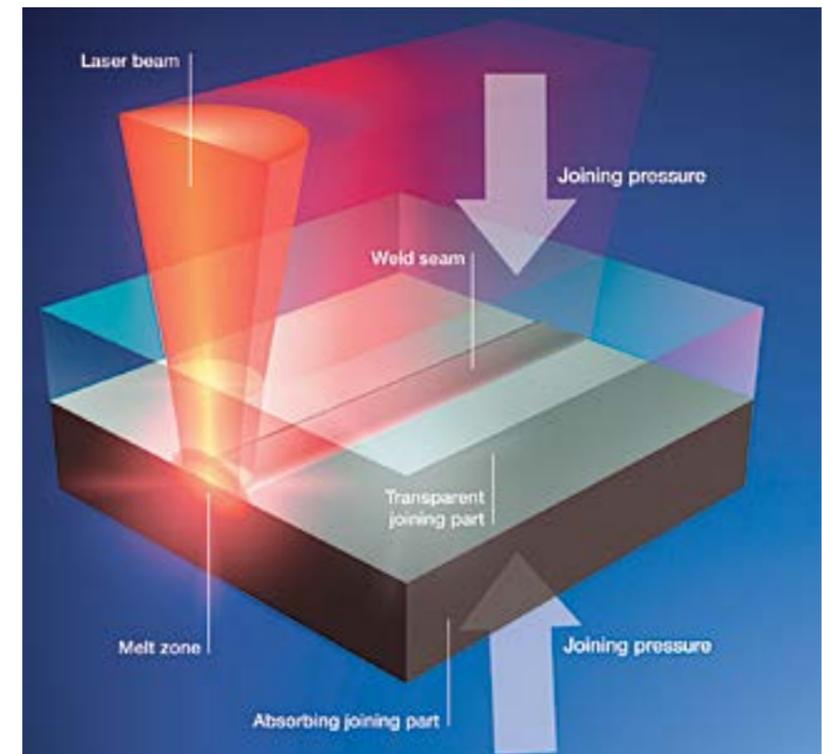


Extruding



Injection molding

Heat seaming/welding



Transport & Use

Nationally via Truck



Proper use is before or after activity.



Internationally aboard
Container Ships



- Lasts 8 years for heating device and 15 years for heat pack
- Parts are repairable, replaceable or upgradeable
- This is a system, package includes Heating Device and 3 sized heat packs
- Heating device is repairable, the heat pack isn't

End of life



- Recycle: Component level
7/12 parts for heating device, 5/7 parts for heat pack
- Reuse: Component level
3/12 parts for heating pack, 3/7 parts for heat pack
- Repair: Product level
Heating device - yes, Heat pack - no
- Landfill: Minimal waste only at complete end of life



- No toxic chemicals
- Heats faster
- Numerous uses in short period of time
- Portable and Self Contained

Reusable
chemical
reaction
heat pack



Hot water
bottle



Reusable
hot/cold pack
freeze



1. Ease to Use
2. Easily Transportable
3. More Environmentally Friendly

