



MAGNOTHERM®

The challenge

Climate crisis, energy crisis

The more we cool, the warmer it gets.

- At least 7% of global greenhouse gas emissions come from today's cooling industry. This could triple by 2050.
- 460 billion tonnes of CO₂e will be emitted by 2060 if we continue without any changes.
- Cooling tech has not changed in almost 2 centuries
- Regulations can be even stricter

It's time for a change.



Our Cooling Solution

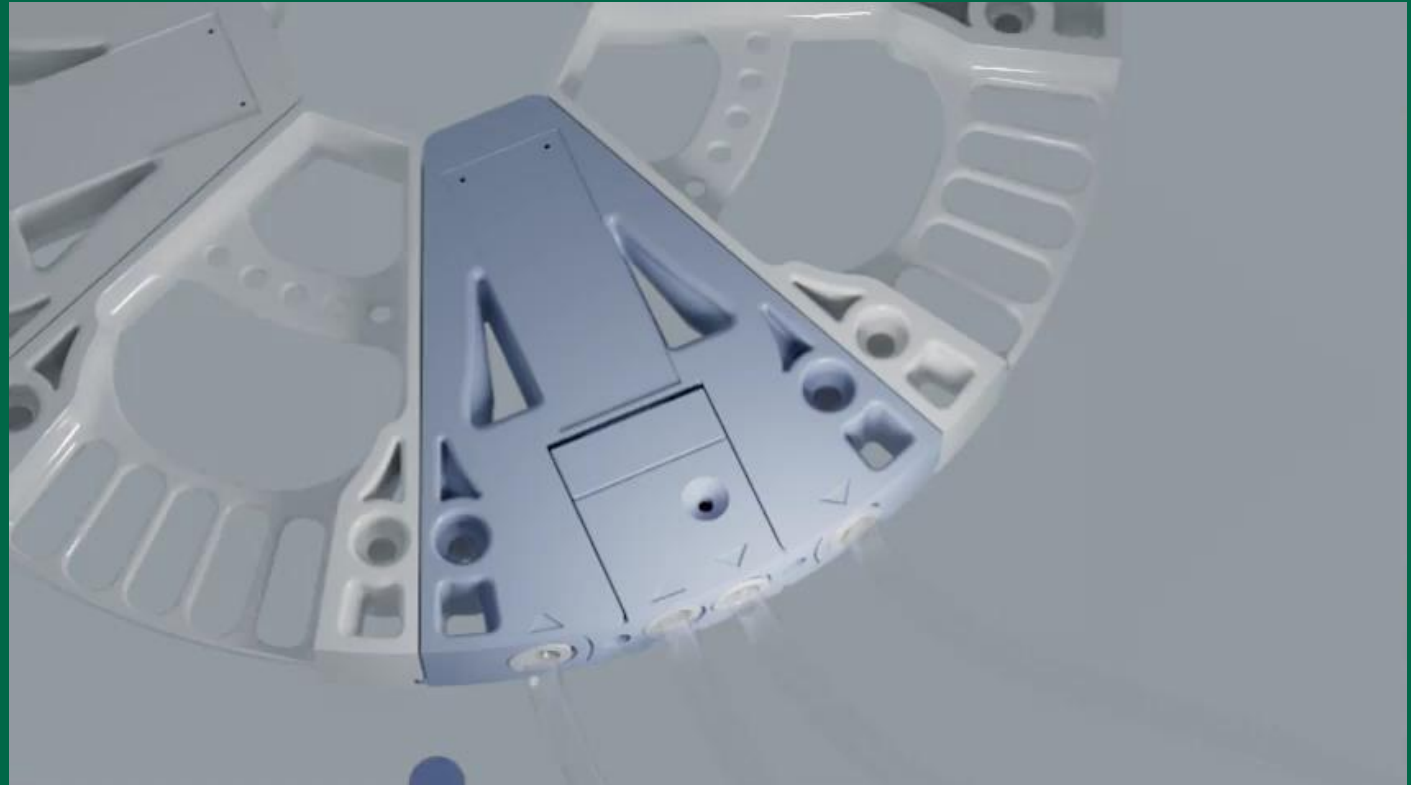
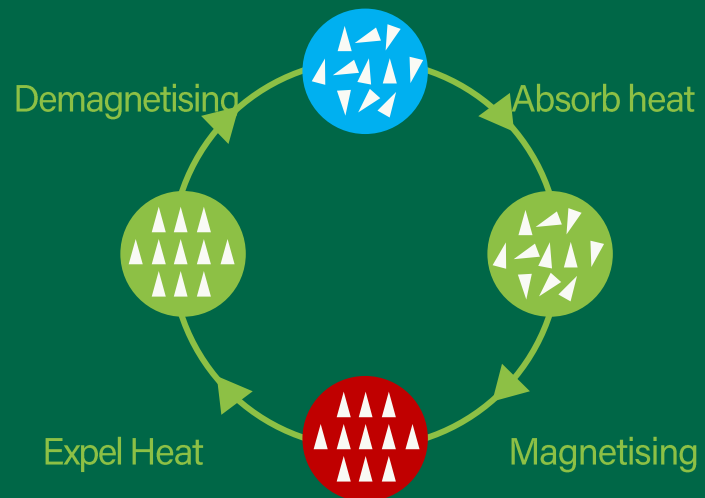
Magnetocalorics

What is the magnetocaloric effect?

Metal getting warm when magnetized,
cold when demagnetized

How do we use the MC-effect?

Through 4 steps of cycle flushing through a water-based fluid, we achieve refrigeration temperatures



What are our USPs?

Comparison to compressor tech



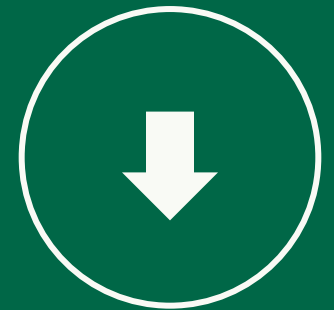
More energy
efficient



0 Direct Global
Warming Potencial



Safe:
Non-explosive /
non-toxic



Low pressure,
low maintenance

First products

POLARIS

First commercially available magnetic cooler:

Gains trust with supermarkets, shows that tech works in real life, educates about tech

Tech specs:

40W / 5°C / 85L

Achievements:

12 devices performing for customers, including Coca-Cola

COP — Coefficient of Performance



Second product

Double Door

Device for Product-Market-Fit:

Removable cooling unit for easy maintenance

Tech specs:

Energy Efficiency (COP):	2...3+
Temperature range:	-3°C...+25°C
Cooling Capacity:	min. 800 Watts

Achievements:

Validation of capacity increase compared to POLARIS by a factor of 25.

Production plan:

2023: First version development
2024: Pilot projects, certification, first sales
2025: Mass production



Team

Our international team of over 40 staff is headquartered in Darmstadt, Germany and our prototype product can be found on nearly every continent. As a deep tech start-up, we stand on the shoulders of decades of pioneering magnetocalorics research and harness it into building the cooling solution of the future.

By developing and supplying a new magnetic cooling technology, we reduce direct greenhouse gas emissions by 100% and increase energy efficiency by up to 30%.

Leadership Team



Timur Sirman
Co & CEO

Industrial engineering and management at TU Darmstadt and TU Berlin. Experience in several start-ups and companies.



Max Fries
Co & COO

PhD in magnetocalorics at TU Darmstadt in 2017. Internationally acknowledged expert in this field



Dimitri Benke
CTO

PhD at TU Darmstadt on magnetic cooling. Expert in the simulation of magnetic fields and fluid dynamics.



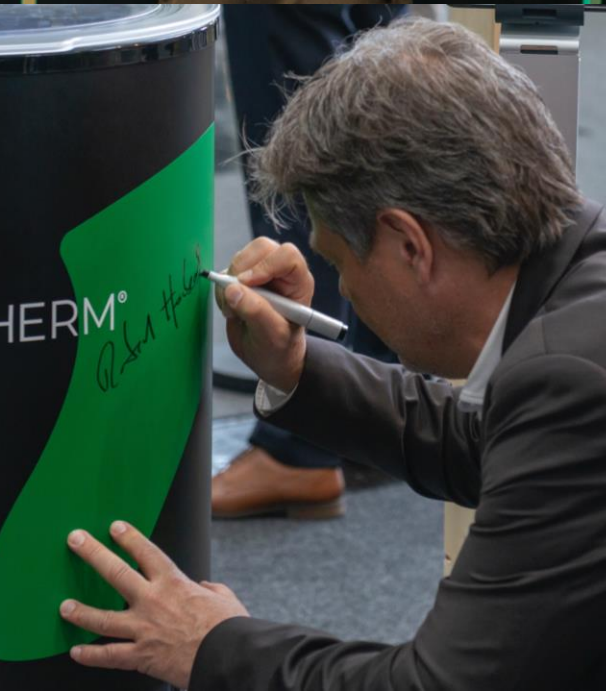
Jeffrey Pickett
CPO

Mechanical engineer at TU Darmstadt and product design at Imperial College London.



Nadia Von Oesterreich
Head of People & Culture

Strategic Design and Management at Parsons School of Design in Paris



Next Generation Cooling

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