Press Kit

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Boilerplate

MAGNOTHERM was founded in 2019 as a TU University spin-off startup. Now a young company, our international team of over 40 people headquarted in Darmstadt has world-leading expertise in magnetic cooling and magnetocaloric materials.

MAGNOTHERM aims to make a significant contribution to reversing the climate crisis and revolutionising the cooling industry, an industry currently responsible for nearly a tenth of global CO2 equivalent emissions, by developing and distributing products and technology which represent the future of refrigeration and cooling. Our technology allows cooling and heating with low pressure and up to 40% more energy efficiency than current gas compression cooling systems. At the same time, it is non-explosive, non-flammable, and low maintenance. We develop our clean cooling technology for the commercial market in Europe and beyond. We look to meet the world's rapidly growing demand for cost-effective and sustainable cooling applications, and offer a path forward to policy makers to help the world transition away from gas compression cooling, a technology which hasn't changed for nearly two centuries.

Facts:

- The more we cool, the warmer it gets.
- 20% of buildings' electricity consumption is due to current gas-compression refrigeration and cooling technology, which for supermarkets jumps to a whopping 50% of electricity consumption.
- Nearly 10% of global greenhouse gas emissions come from today's cooling appliances.
- 9 Gt of CO2 will be emitted by 2050 if we continue refrigerating without any changes.
- MAGNOTHERM's cooling technology reduces direct greenhouse gas emissions by 100% and increases energy efficiency by up to 40%.
- We are headquartered in Darmstadt, Germany with worldwide distribution.
- Our team consists of over 40 people from across the world.

What's Next?

We see an opportunity for MAGNOTHERM to establish its tech as a game changer for cooling technology.

Our goals are to:

1. Make magnetocaloric cooling visible and more approachable to B2B-clients as well as consumers via our showroom product line POLARIS: this will also support policy makers in updating norms and regulations.
2. Establish the technology in the commercial sector.
3. Transfer the technology onto additional applications such as server cooling and others.

Description of Technology:

Magnetocaloric materials are at the heart of our technology. By exposing these materials to magnetic fields and magnetising them, the material is instantly heated. This heat is dispersed using a water-based cooling fluid. The material is then demagnetised, reducing its temperature. The material cools down a fluid which is then pumped throughout the refrigeration cabin to reach the desired temperatures. The process is then repeated to maintain the temperature in the adequate range of cooling.

Current and Future Products:

MAGNOTHERM has been working since 2019 to build commercial-ready magnetocaloric refrigeration. After building various research devices and cooling prototypes, MAGNOTHERM developed POLARIS, the first ever magnetic beverage cooler that can chill drinks down to a refreshing 5°C. This device uses a comparable amount of power to the market equivalent while eliminating climate damaging chemicals and risks such as flammability and explosivity. It proves that cooling *can* be both safe and clean. The next step on MAGNOTHERM's product roadmap is a double door refrigeration device to service the mass retail spaces where commercial compressor technology is already present. This will usher in the tipping point for widespread adoption of magnetocaloric cooling.

POLARIS:

Small and flexible beverage cooling device. Available now for purchase or rental.

Commercial Double Door Unit:

Commercial double door cooling unit in active development, pre-orders coming very soon.

Social Media Handles:

Instagram: @magnotherm

LinkedIn: MAGNOTHERM

Hashtags: #magnotherm #nextgenerationcooling #magnoteam

Contact Information:

Marketing:

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Business Development and Investment Inquiries:

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Founder Bios:

Timur Sirman

CEO, Master of Science, Engineering and Management at TU Darmstadt 2018, Scientific researcher TU Darmstadt, he/him

Timur is responsible for overseeing investment and outreach processes. Timur is responsible for business development, finance and operations. He is an alumnus from TU Darmstadt (Bachelor's) and TU Berlin (Master's). He has gained profound experience in entrepreneurship and management.

Max Fries

COO, PhD in magnetocalorics from TU Darmstadt 2017, Researcher TU Darmstadt, he/him

Max ensures the internal team is organized and the teams are focused on the correct priorities, using his vast knowledge of magnetocalorics to guide the company. Max is responsible for the technical development as well as cooperations. He's an expert in the field of magnetocaloric materials and magnetic cooling devices.

Dimitri Benke

CTO, PhD candidate at TU Darmstadt, Scientist TU Darmstadt, he/him

Dimitri leads the technological aspect of the company, ensuring innovative new research moves forward and is responsible for all technical developments. He is an expert in permanent magnets, magnetic field simulations, magnetocaloric cooling devices, and more. Dimitri studied physics at Technical University Dresden before joining the research group of Prof. Oliver Gutfleisch to pursue his PhD studies in the fields of magnetic cooling.

Jeffrey Pickett

CPO, Master of Science, Global Innovation Design from Imperial College London, COO Augmented Thinking, he/him

Jeffrey is in charge of leading the production team and owning the products developed at the best quality. Jeff is responsible for the system design, components and integration. He is an alumni from TU Darmstadt in mechanical engineering and management as well as from Imperial College London and Royal College of Arts in Global Innovation Design. Before joining MAGNOTHERM Solutions, he pursued his own startup in the field of augmented thinking.

Key Advisors:

Prof. Dr. Oliver Gutfleisch
Professor at TU Darmstadt, Magnets and magnetocalorics expert

Oliver is a pioneer in the fields of magnetic cooling and permanent magnets. He is one of the most cited scientists worldwide in these fields and holds numerous patents. His international recognition can be seen in the organisation of the most important conferences in the field (REPM 2016, Thermag 2018, IEEE Frontiers 2024, JEMS 2025) at TU Darmstadt. Oliver is an IEEE fellow and received the highest European Magnetism Award (2023) for his developments of magnetic materials for sustainable energy applications, and he also received the prestigious ERC Advanced Grant in the field of magnetic cooling in 2017. He is an expert in the criticality of the rare earths, working on recycling, substitution and circular economy of magnets. In 2006 Prof. Gutfleisch and his partners founded the company evico magnetics GmbH, which has been successful on the market since then. At MAGNOTHERM, Oliver advises the team on technological, organizational and strategic levels.

Dr. Tino Gottschall
Group leader at Helmholtz-Zentrum Dresden-Rossendorf (HZDR), Magnets and Hydrogen expert

Tino is a leading scientist at the Helmholtz Centre Dresden-Rossendorf. He has extensive experience in magnetic cooling and is regarded as a young offspring scientist. Tino has published numerous, often quoted scientific papers and holds two patents on magnetic cooling. He advises MAGNOTHERM on the technological development and device improvement.

Select Links to Press Coverage

- TechCrunch: Magnets and water net Magnotherm $6.9M seed round to kill hazardous refrigerants
- brand eins: Heiß, kalt, heiß, kalt
- Frankfurter Allgemeine: 6,3 Millionen Euro für magnetischen Kühlschrank
- Forbes.at: 30 under 30, Timur Sirman
- Frankfurter Allgemeine: Gefriertruhe ohne gefährliche Gase
- Frankfurter Rundschau: Kühlung mit Magnetfeldern: Darmstädter Unternehmen ist Frankfurter Start-up des Jahres