

# NINa-News

North European Initiative  
Nanotechnology e.V.

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## Dear Reader

Schleswig-Holstein is a hub of innovation that thrives on its dynamic spirit, curiosity, and ability to translate knowledge into economic value. Academic spin-offs, i.e., the establishment of new companies from research institutions and universities, are much more than just starting points for courageous founders: they are drivers of technological progress and central to Germany's future viability. They create jobs and enable value creation by producing solutions that were not previously available.

In Schleswig-Holstein, Kiel University acts as an essential breeding ground for innovation. Its laboratories and institutes not only produce scientific findings, but also ideas that give rise to start-ups with national and international appeal. The close interlinking of scientific excellence and entrepreneurial thinking creates a solid foundation on which new technologies and business models can grow.

However, technology-oriented start-ups in particular face special challenges along this path: from developing market-ready products and securing financing to staffing key positions in the team. At the same time, the decisive factors for success are also evident here: clear visions, customer-centric business models, resilient networks, and the ability to learn from setbacks.



Dr. Anke Rasmus

It is precisely these skills that are being specifically strengthened in Schleswig-Holstein's constantly growing start-up ecosystem.

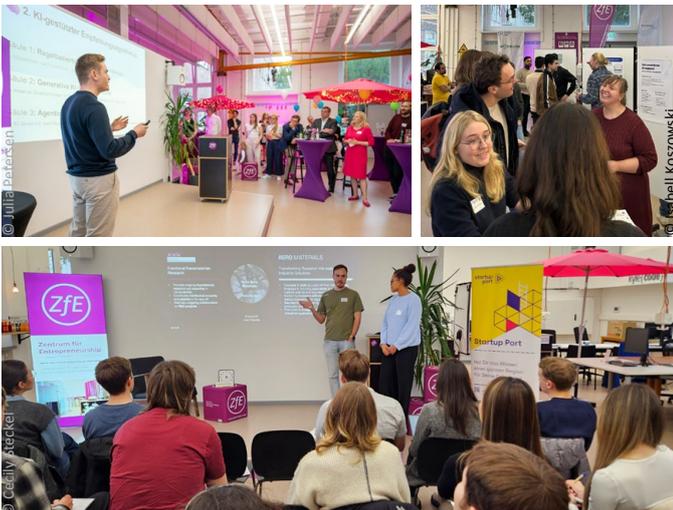
Spin-offs benefit from a broad-based and well-networked support landscape in Schleswig-Holstein: incubators, funding programs, university offerings, transfer offices, and networks accompany founders in starting a business from the initial idea through validation to scaling. These coordinated services lower barriers, pool skills, and make a decisive contribution to sustainably transforming innovation potential into added value.

At Kiel University, the Transfer Division has been supporting those interested in starting a business for many years, in particular through the Center for Entrepreneurship (ZfE) and technology transfer, in the development and implementation of their start-up projects.

We look forward to accompanying and supporting you on your journey.

Sincerely

Dr. Anke Rasmus  
Head of the Center for Entrepreneurship  
Kiel University  
1st Chair of StartUp SH e.V.



# AERO MATERIALS GmbH

## Vacuum without the annoying parts

The innovative functional material by [AERO MATERIALS GmbH](#) from Kiel is the basis of the young high-tech company, which was founded in 2025 as a spin-off from Kiel University. With an air content of over 99.9%, these so-called *aero materials* have a very low density and combine exceptional lightness with electrical conductivity and a wide range of possibilities for functional adaptation. This special combination makes the material attractive for applications where weight, functional integration, and material efficiency are crucial—from sensor technology to robotics.

[AERO MATERIALS'](#) current development work focuses on innovative vacuum applications: the material enables a novel compact design for a purely electric vacuum gripper. As the key feature the vacuum is generated directly in the material itself, without any moving parts, external pumps, or compressed air systems. A short electrical pulse heats the material locally, causing the enclosed air in the highly porous material to expand and leave the chamber. After contact with the object to be gripped, the structure cools rapidly, leading to a drop in pressure and thus the creation of a stable vacuum.

Compared to conventional vacuum grippers, which usually rely on complex peripherals such as pumps, valves, and compressed air networks, this approach offers numerous advantages: The reduction to an electrical pulse minimizes energy consumption, reduces operating noise, and simplifies integration into existing automation solutions. At the same time, typical sources of error and maintenance costs are significantly reduced. The gripper functions entirely without magnets, rare earths, or lubricants and is suitable for use

in sensitive environments such as clean rooms. First applications show that this system opens up new degrees of freedom in terms of weight, dynamics, and flexibility, particularly in robotics, pick-and-place systems, and mobile handling solutions.

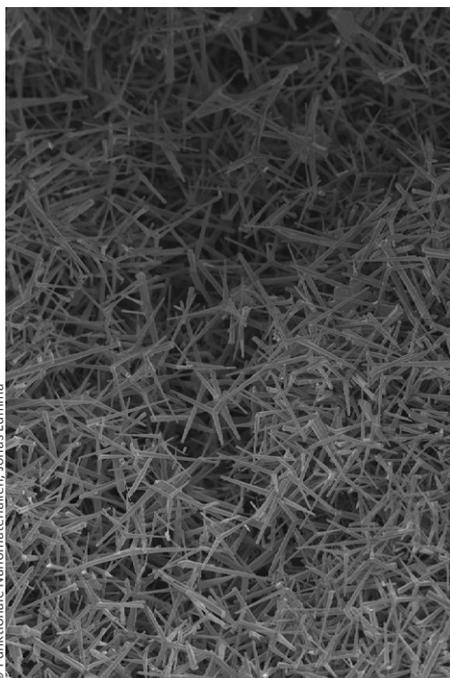
The aero materials from [AERO MATERIALS GmbH](#) open up further applications wherever low weight and high functionality are required, for example as a filter medium for air and water purification. Sensors, optical functionalization, and electromagnetic shielding are also promising fields of application.

[AERO MATERIALS GmbH](#) is entering into strategic partnerships, particularly with mechanical engineering and industrial companies, for the development of prototypes and pilot projects. Interested companies are invited to get in touch and jointly shape the future of vacuum technology.

*Scanning electron microscope images of aero material. Left: the material is made of hollow tubes with nanometer-thin graphene walls. Right: single tetrapod in aero material with removed arm, demonstrating the ultra-low wall thickness.*



*The AERO MATERIALS team with demonstrator exhibition. Follow the link for [online prototype impressions](#).*



# Imaging of cancer: early detection, staging and therapy control

The earlier cancer is detected, the better it can usually be treated. [QuantView](#), a startup founded two years ago as a spin-off from Kiel University, aims to transform how doctors see cancer inside the body. Together with a team at Kiel University, the company is working on a new MRI contrast agent that can make cancer cells visible at a very early stage by looking at their metabolism.

Malignant cells have a greedy metabolism – they love sugar. To fuel their rapid growth, they switch to a fast but inefficient way of breaking down sugar, a pathway that healthy cells normally use only when they lack oxygen. In this process, a substance called pyruvate is formed. Tumor cells convert a large part of this pyruvate into lactic acid (lactate). This creates an acidic environment that weakens the immune system and helps the tumor spread.

The new method targets exactly this step: it makes the formation of lactate from pyruvate visible using radiation-free MRI. In conventional MRI, pyruvate, lactate and other molecules cannot be distinguished; the signals are too weak and are lost in the much stronger



*QuantView's technology enables new possibilities for MRI imaging of cancer.*

signal from water. To pick them out, you would need an enormous signal boost – something like 20,000 times stronger than what a normal MRI delivers.

The research team around Prof. Herges has solved this problem with a clever trick called hyperpolarization. Using a special form of hydrogen (parahydrogen), they magnetically “tag” the pyruvate

molecules so that their signal in the MRI becomes strong enough to detect. This could allow doctors in the future to see tumors earlier, understand how far they have already developed and monitor how well a therapy is working. [QuantView's](#) goal is to bring this technology from the laboratory into everyday clinical practice.



*CSO Prof. Dr. Rainer Herges heads the research activities at QuantView.*



*Dr. Stefan Kloth  
CEO*



*Dr. Arne Brahm  
Lab Manager*

*The team behind  
QuantView*



*Frederik Bernard  
CFO*



*Dr. Peter Schottes  
Operations & Strategy*



*Marion Meinen  
Office Manager*

# Save the Date: NIBS & Nanotech Poland 2026

June 8–11, 2026 | Adam Mickiewicz University in Poznań, Poland

Please save the date for the [9th Nanotechnology and Innovation in the Baltic Sea Region \(NIBS\) Conference](#), which will take place jointly with Nanotech Poland 2026 from June 8–11, 2026, at the Morasko Campus of Adam Mickiewicz University in Poznań, Poland.

This joint event brings together the NIBS Conference and Nanotech Poland, creating an international platform for cutting-edge research and innovation in nanoscience and advanced materials, as well as their applications in health, energy, manufacturing, and environmental technologies. The conference aims to foster interdisciplinary exchange and strengthen collaboration between academia and industry across the Baltic Sea region and beyond.

In addition to a high-quality scientific program featuring keynote and invited lectures and thematic scientific sessions, the conference will host kick-off meetings for several major international research projects, including initiatives within CONCERT-Japan, ERA4Health, and national research

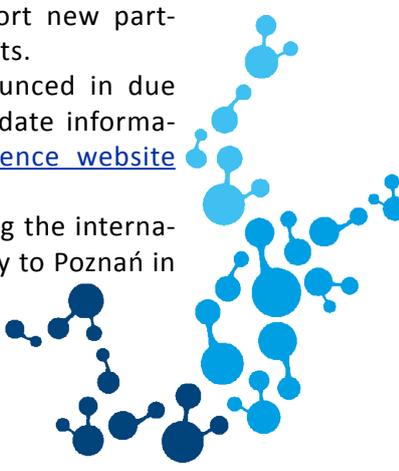
programs focusing on polymer nanomaterials.

Special attention will be given to innovation-oriented activities and early-career researchers, alongside extensive networking opportunities designed to support new partnerships and collaborative projects.

Further details will be announced in due course. In the meantime, up-to-date information is available on the [conference website nanotechpoland.amu.edu.pl](http://nanotechpoland.amu.edu.pl).

We look forward to welcoming the international nanotechnology community to Poznań in June 2026.

**NIBS**  
conference 2026  
Nanotechnology | Innovation | Baltic Sea Region



## Nanotech in Life Science Conference 2026

### NanoTech in Life Science

Lübeck, Fraunhofer IMTE

April 14-15, 2026

[www.nanotech.events](http://www.nanotech.events)



Nanotechnology is rapidly transforming the life sciences, enabling new approaches in diagnostics, targeted drug delivery, regenerative medicine, imaging, and biosensing. This conference provides an interdisciplinary forum to explore how nanoscale materials and technologies are advancing biological understanding and driving the next generation of healthcare solutions.

The scientific program will cover a broad range of topics, including functional nanomaterials for biomedical applications, magnetic nanoparticles for imaging and therapy, nanosensors and microfluidic systems for precision diagnostics, nanostructured biomaterials for tissue engineering, as well as translational and industrial perspectives in nanomedicine.

Participants can expect keynote lectures by lead-

ing international experts, scientific sessions bridging fundamental research and clinical application, poster presentations from early-career researchers, and networking opportunities bringing together academia, industry, and clinical stakeholders. Selected laboratory tours at [Fraunhofer IMTE](#) will provide insight into state-of-the-art facilities for nanoparticle synthesis and imaging technologies.

Early-bird registration is available until February 28, 2026. Further information, including the detailed program and registration, is soon available at [www.nanotech.events](http://www.nanotech.events).

We look forward to welcoming you to Lübeck in April 2026 for an inspiring and interdisciplinary exchange at the interface of nanotechnology and life science.