



NINa-News

North European Initiative
Nanotechnology e.V.

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www.nina-sh.de

Dear members and network partners,

Innovation and progress require not only visionary ideas, but also the people who can make them a reality. At a time when a shortage of skilled workers poses challenges for companies and research institutions alike, the [Science and Technology Academy \(STA\)](#) is providing a decisive impetus.

This initiative, which was launched in close cooperation with Kiel University and NINa, brings together highly qualified students and companies from Schleswig-Holstein. With the support of the Ministry of Economic Affairs, the

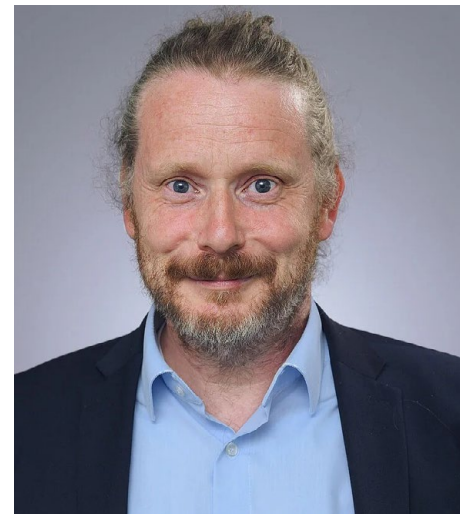
[STA](#) offers a platform for binding talent to companies at an early stage and developing tailored solutions for specialist requirements and innovation projects.

The [STA](#) expands NINa's mission: to promote talent and support companies in the development of pioneering technologies.

The [STA](#) goes far beyond traditional recruitment approaches: in addition to the placement of master's and doctoral students as working students or interns, it also opens up the possibility of carrying out joint research projects.

Companies not only benefit from the scientific expertise, but can also have these collaborations supported by the research allowance. Under the right conditions, for example, wage costs for involved specialists can be tax-privileged - an additional incentive to drive innovative projects forward together.

It is particularly noteworthy that companies do not only benefit from the skills of the specialists after graduation, but also from their know-how and commitment during their studies. With this approach, the [STA](#) not only strengthens the competitiveness of the



Professor Rainer Adelung

participating companies, but also makes a significant contribution to securing Schleswig-Holstein as a business location.

Benefit immediately from a highly qualified workforce, drive innovation: Let's seize these opportunities together and shape the future - today, for our companies of tomorrow!

Yours sincerely,

*Prof. Dr. Rainer Adelung,
Kiel University and Extended Board of
Directors NINa*

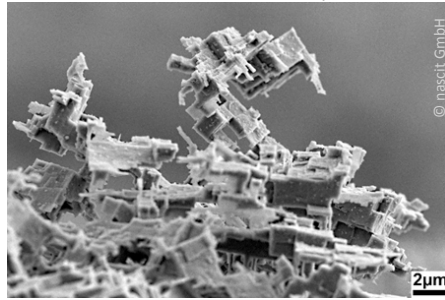


nascit GmbH: Nanotechnology for industrial joining processes

[nascit GmbH](#) from Kiel is a prime example of how innovative nanotechnology can solve economic and industrial challenges. The company was founded in 2019 as a spin-off from Kiel University (CAU) and is based on groundbreaking research. Its unique process, nanoscale sculpturing, creates extremely strong and durable bonds between metal and plastics in particular. This technology has the potential to revolutionize entire industries such as the automotive industry, aviation and shipbuilding.

Nanotechnology is at the heart of [nascit GmbH](#). The nanoscale sculpturing process treats metallic surfaces with precise chemical processes to create fine barbed structures. These nanostructured surfaces are a perfect basis for strong material bonds. This type of bonding is particularly relevant for applications where weight and durability are crucial - for example in the development of lightweight, energy-efficient components for the mobility industry.

The strength of the process lies in its flexibility: it can be applied to many types of metal and offers an environmentally friendly alternative to conventional bonding or mechanical joining technologies. Thanks to these properties, nanoscale sculpturing is a pioneering and environmentally friendly innovation, both technically and economically.



The Nanoscale Sculpturing process creates micro-hooks which promote strong bonds between surfaces.

However, [nascit's](#) success is based not only on its technology, but also on the way in which it uses cooperation and networks. Networks play a crucial role for [nascit](#): they provide access to new knowledge, promote interdisciplinary exchange and support the search for partners for joint development projects. From the very beginning, the company has relied



nascit can especially join metals and plastics in firm connections.

on exchange with leading research institutions, industry partners and networks such as NINa. This close dialog makes it possible to understand current industry challenges and develop solutions that are both technically and economically convincing.

[nascit GmbH](#) impressively demonstrate how scientific findings from basic research at Kiel University can be transformed into marketable technologies through targeted cooperation and strong networks. Thanks to its ability to combine science and industry, [nascit GmbH](#) develop solutions that increase efficiency, reduce costs and are more sustainable at the same time.



A strong team: at nascit engineers and businessmen work hand in hand.

Nano-coatings for the energy technology of the future

[Aalberts surface technologies Lübeck](#) has been a problem solver in the field of surface and material technologies for more than 30 years. [Micro- and nano-coatings produced using vacuum plasma processes](#) fulfill a variety of functions on a wide range of products from the automotive industry to medical and hydrogen technologies.



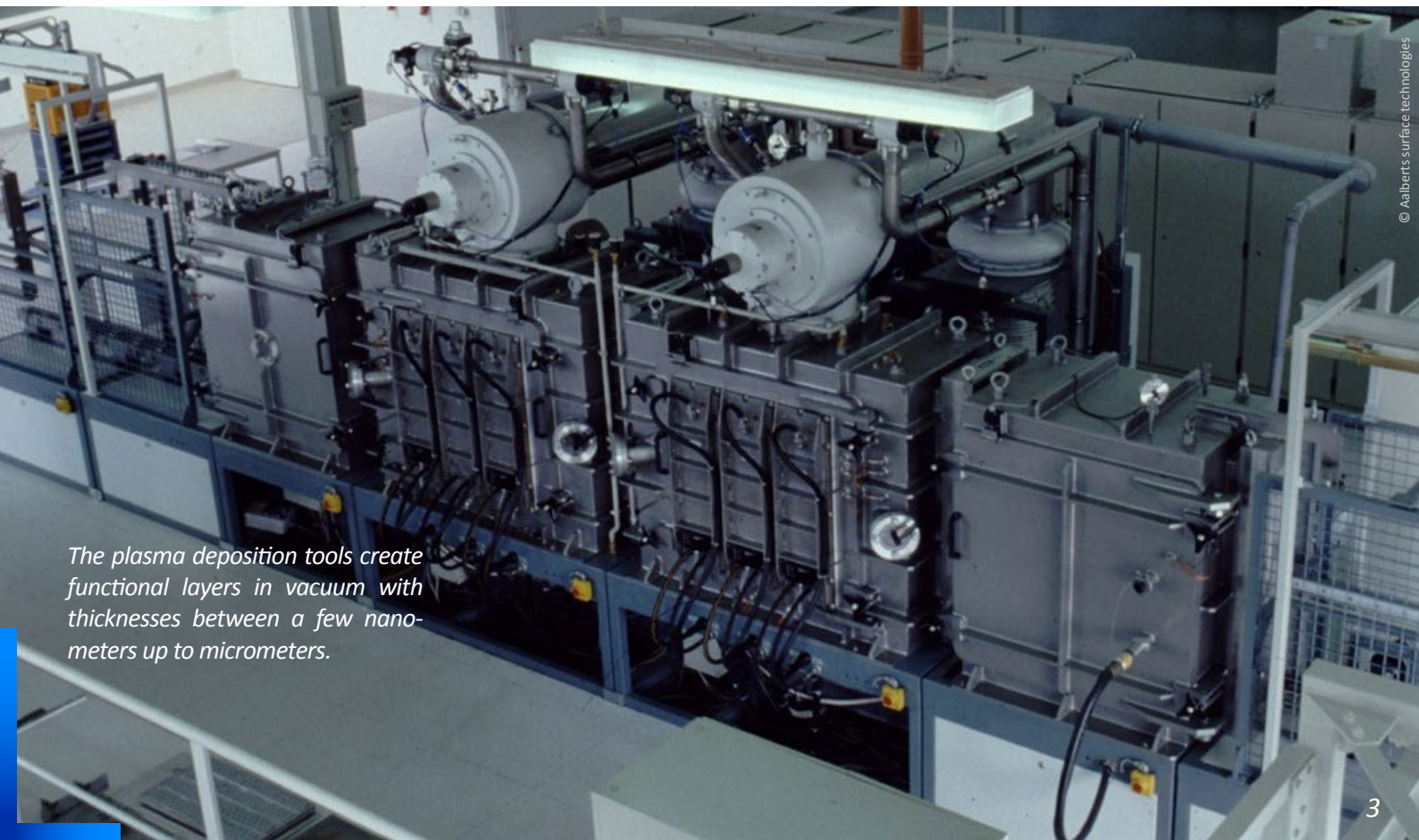
surface technologies

Surface coatings are true all-rounders - they can protect parts from wear and corrosion, change the sliding and adhesive properties, prevent allergies and inflammation or enhance the appearance of surfaces. The cerid® coatings from [Aalberts](#) increase the service life of engines, tools and machines and thus make an important contribution to conserving our resources and increasing productivity and performance. In addition to coating of classic industrial products, [Aalberts](#) also have been using coatings in medical technology for over 30 years, for example on implants and surgical instruments.

The challenging transformation of the automotive industry, particularly in Germany, is more pressing than ever and affects suppliers as well as vehicle manufacturers. [Aalberts](#) currently coat around 30 million components for combustion engines every year - a "factory" that is being developed into a "giga-factory" for hydrogen technology.

This is because the central hydrogen components, the fuel cell and the electrolyzer, are often exposed to strong acids or alkalis and are also subjected to an electrical voltage. Coatings are required here that are chemically highly stable and at the same time maintain high conducti-

vity in order to minimize electrical losses. Low material usage and short throughput times are also crucial for suitability for series production. These requirements are met by functional coatings with a thickness of 5 to 50 nanometres, which [Aalberts](#) also develop on a customer-specific basis. The company has already coated over 500,000 parts in a small series for an automotive hydrogen application. Four installed series production tools already have sufficient manufacturing capacity to play a key role in the energy transition in hydrogen technology. And so in these challenging times, nanotechnology is helping to transform and support the economy.



The plasma deposition tools create functional layers in vacuum with thicknesses between a few nanometers up to micrometers.

Decorative and functional: anything but superficial

EC Europ Coating GmbH can look back on a history of over 30 years in surface coating and has continuously expanded its range of coating services since then. At the four locations in Hohenlokstedt, Tuttlingen, Zittau and Dresden, high-quality branded products are coated with high brilliance and durability, from individual items to large series.

Thanks to its many years of experience in the field of PVD coating, [EC Europ Coating GmbH](#) offers a wide range of functional and decorative coatings using physical vapor deposition. One of the core competencies at the Hohenlockstedt site is real gold coating. Various alloys in different shades are used to create decorative coatings for watches, writing instruments, glasses, jewelry and many other quality products. The gold coatings are also used functionally for medical implants, instruments, analysis equipment or innovative drive systems.

Medical instruments, tools, implants and prostheses are also coated in Tuttlingen, the “world center of medical technology”. All production facilities meet the high medical standards for biocompatibility, sterilization and cleaning and are certified in accordance with DIN ISO 13485.

The range of materials to be coated is diverse: metals, alloys, glass, ceramics and plastics. In addition to bronze, copper and gold, deep black and anthracite colorations are also possible. In addition to the actual coatings, there are also pre- and post-treatment options, including blasting, polishing, lasering, anodizing and painting with nano clear lacquer.

As a small, medium-sized company, [EC Europ Coating](#) is aware that innovation is a key to success in a globalized world. The company is therefore also involved in publicly funded research projects in order to contribute its know-how from years of



From decorative to functional, from glasses to medical implants: EC Europ Coating GmbH offers a wide variety of surface coatings.

experience in the field of coating technology to the research process in Germany. There are currently cooperative development activities in important areas of the future, such as 3D printing processes and surface treatment, the development of new implants, the coating of new materials for sensors/actuators and the application of innovative coating materials. [EC Europ Coating GmbH](#) has joined NINa to expand its network of partners and open up prospects for new and established markets.



On our own behalf: A (brief) review of 2024

Dear members and partners,

2024 was a year of change and further development for NINa e.V. With the renaming of the association from “ North German Initiative Nanotechnology Schleswig-Holstein e.V.” to “North European Initiative Nanotechnology (NINa)”, we have taken an important step towards internationalization. Our focus is now increasingly on the Baltic Sea region and cooperation with international nanotechnology partners.

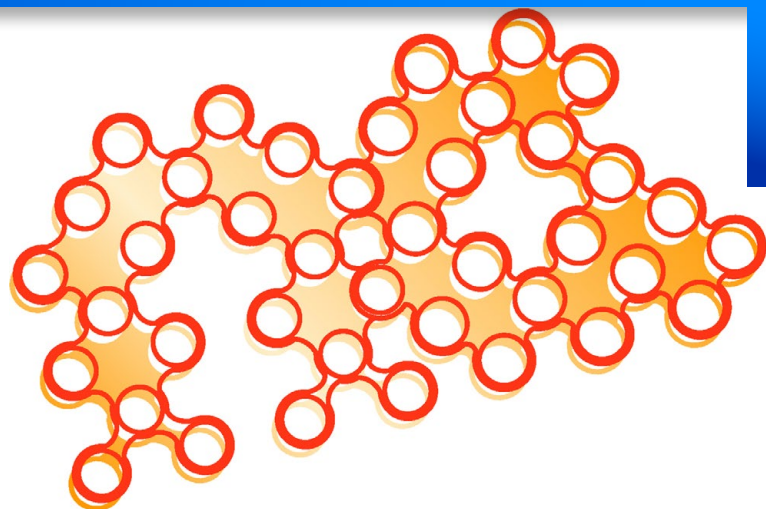
Another milestone was the long-term establishment of the network manager position in the [Nanotechnology Office at Kiel University](#). This permanent solution offers stability and enables us to implement our goals sustainably.

2024 was all about counteracting the shortage of skilled workers in Schleswig-Holstein. With our [STA project \(Science and Technology Academy\)](#), we have connected companies with international talents who are pursuing their Master’s degree in materials science or electrical engineering at Kiel University. A particular highlight was the presentation of the project on January 19, 2024, when [State Secretary Tobias von der Heide handed over the grant notification of around 320,000 euros](#).

Thanks to the funding from the Ministry of Economic Affairs, Transport, Employment, Technology and Tourism, we have already been able to record initial successes and place several students in scientific groups at the CAU Faculty of Engineering. Companies that would also like to participate can find more information on our website: www.science-and-technology-academy.de.

A highlight of the year was the [nanotechnology conference NIBS 2024](#) (Nanotechnology and Innovation in the Baltic Sea Region), which took place in October in Tartu, Estonia, as a co-conference of FM&NT. It brought together leading scientists, companies and institutions from the Baltic Sea region and provided a platform for exchanging innovations and strengthening international cooperation.

NIBS is a central component of NINa’s international focus. The conference allows networks to be expanded, knowledge to be shared and cross-border projects to be driven forward. It helps to position the Baltic Sea region as a location for innovation and create new opportunities for cooperation and market potential.



We were also able to celebrate successes at regional level in 2024. [The Transfer Day 2024](#), which was co-organized by the Nanotechnology Office, provided a platform for presenting innovative projects in the fields of nanotechnology and new materials at Kiel University. The event impressively demonstrated how science and industry in Schleswig-Holstein can shape the future together.

We are delighted to welcome two new members in 2024: the [Deutsches Elektronen-Synchrotron \(DESY\)](#) and [KiWi GmbH](#). Both partners enrich our network with their expertise and commitment to nanotechnology and securing skilled workers.

We look back with pride on the successes of 2024 and look forward to an exciting 2025 with new projects, events and collaborations. Together, we will continue to drive forward the promotion of skilled workers, international networking and regional innovative strength.

Thank you for your support and commitment!

With best wishes for a successful and inspiring 2025
Your team from NINa e.V.



Franz Faupel

Prof. Dr. Franz Faupel,
Gründer und 1. Vorstand NINa



Christian Ohrt

Dr. Christian Ohrt,
Geschäftsstelle Nanotechnologie

Conference: Nanotechnology in Life Science

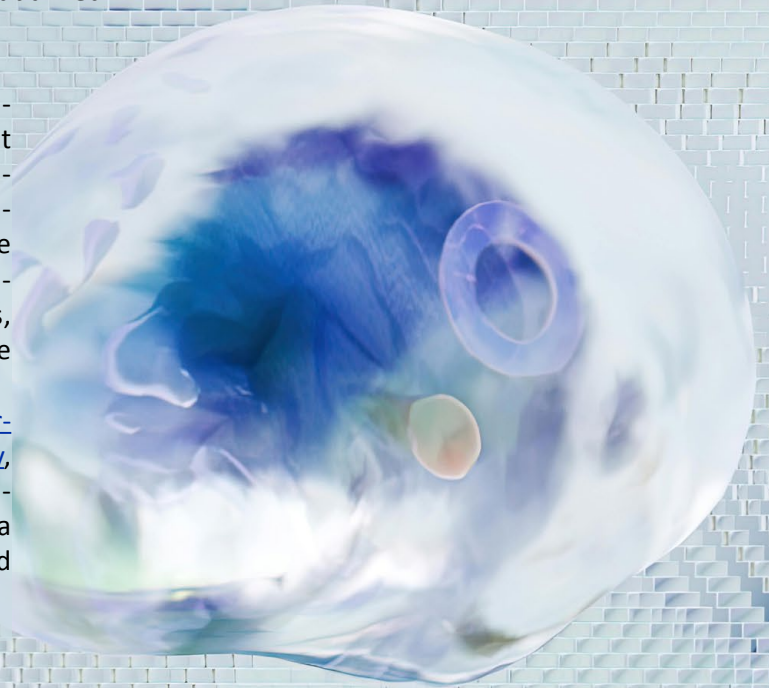
Save the date: July 9-10, 2025

Location: Fraunhofer Research Institution for Individualized and Cell-Based Medical Engineering, Lübeck

NINa is excited to announce the upcoming conference Nanotechnology in Life Science, a unique event that brings together leading minds from both academia and industry. This conference aims to foster collaboration, inspire cutting-edge research, and drive technological advancements in the highly interdisciplinary field of nanotechnology and new materials, which is also a key enabling technology in medicine and life science.

The conference is jointly organized by [Nano in Germany](#), the [North European Initiative Nanotechnology](#), and [Life Science North](#). While the workshop will emphasize highlights from Germany and the Baltic Sea region, contributions from other parts of the world are also welcome.

We look forward to seeing you in Lübeck!



Symposium: Frontiers in Nanocomposite Materials - Innovations and Applications

Fr, March 28, 2025 | 13:00 – 18:00 CET | Registration deadline: 01.03.2025
Lecture hall building D, Faculty of Engineering, Kaiserstr. 2, 24143 Kiel

Join us for the Mini-Symposium on Nanocomposite Materials, where leading experts and researchers will explore groundbreaking advancements in nanotechnology and its diverse applications. This event offers a unique opportunity to dive into cutting-edge topics like cluster-assembled computing, diffusion in liquid glass-forming metals, and two-dimensional nanostructures for sensing. Whether you're a professional in the field, a stu-

dent, or just passionate about the future of materials science, this symposium promises to inspire and inform. Don't miss your chance to connect with pioneers in the field and broaden your understanding of nanotechnology's transformative potential! [Registration is free of charge.](#)

The symposium is organized in honor of Professor Franz Faupel to celebrate his distinguished career as he transitions into retirement.



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