

NINa-News

North German Initiative
Nanotechnology SH

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www.nina-sh.de

Dear Reader,



Dr. Bernd Roß

nanotechnology has always fascinated me, especially the fact that it can be used to create completely new optical, magnetic or electrical properties. Today, these can be used to develop disruptive products and applications or to innovatively improve existing products. The areas of application are enormously diverse and there is hardly any economic sector that does not

benefit from nanotechnology - it has long since reached our everyday life.

For example, information and communication technologies, the basis of the digitalization of our everyday and working lives, can only achieve their current level of performance through the use of nanotechnological processes. And the development continues: quantum technologies have the potential for completely new technical solutions. Research institutes and companies around the world are devoting considerable resources to advancing this field.

To keep up with global competition, interested, qualified and motivated people are needed.



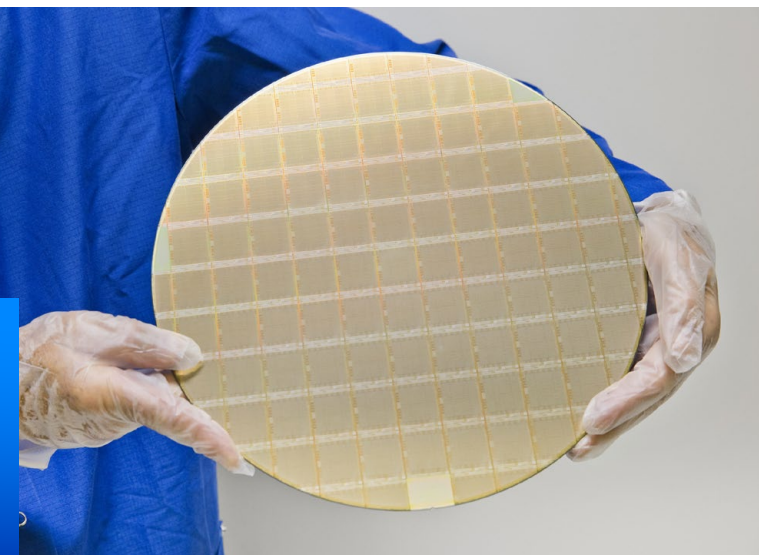
Therefore, as a representative of the Ministry of Education, it is important to me to present a federal funding program: the BMBF's NanoMatFutur competition for young scientists. This funding measure supports excellent young researchers whose ideas stimulate new applications in industry and expand the boundaries of classical disciplines such as chemistry, physics, biology, nanotechnology and process engineering with interdisciplinary research. The innovative impulses of young academics actively contribute to securing and further developing Germany as a location for research and technology.

Funding from NanoMatFutur gives young scientists the opportunity to establish their own independent junior research group at a research institution in Germany and to qualify for management positions in business and research. I cordially invite the NINa networkers to actively participate in the federal government's call for proposals. Stay innovative!

Bernd Roß

Dr. Bernd Roß

Curator NINa SH and Head of the Department for Knowledge and Technology Transfer in the Ministry of Science, Economics and Transport of the State of Schleswig-Holstein



IBM's CPU Power10: seven nanometers small structures

Wir fördern Wirtschaft



Landesprogramm Wirtschaft: Gefördert durch die Europäische Union - Europäischer Fonds für regionale Entwicklung (EFRE), den Bund und das Land Schleswig-Holstein

Schleswig-Holstein. Der echte Norden.

Training the immune system with nanoparticles

The development of new active substances to influence the human immune system has been of central importance for medicine not only since the corona crisis. [Professor Regina Scherließ](#) at Kiel University is researching and developing nanoparticulate carriers in order to use alternative uptake pathways in the body. Recently, the pharmaceutical technologist has also joined the board of directors of NINA SH.

„The enemies of our immune system are classically of particulate shape. We therefore package active ingredients in nanoparticles in order to present them to immune cells,“ Professor Scherließ explains the approach of her powder-based development work at CAU Kiel. The powders enable the innovative administration of active ingredients for immune modulation via mucous membranes, e.g. the nose or lungs.

„Research in a university context also makes it possible to develop completely new concepts and strategies. In industry, the usability is immediately up for debate and the freedom of research is less“, says Scherließ about her work. Nevertheless, she always sees pharmaceutical technology close to the application and maintains intensive contact with the industry. According to Scherließ, real issues should always be in the focus of academic pharmaceutical research. Appropriately, she received the Nanomedicine Award of the European Technology Platform for Nanomedicine in 2015 for the application relevance of her research.

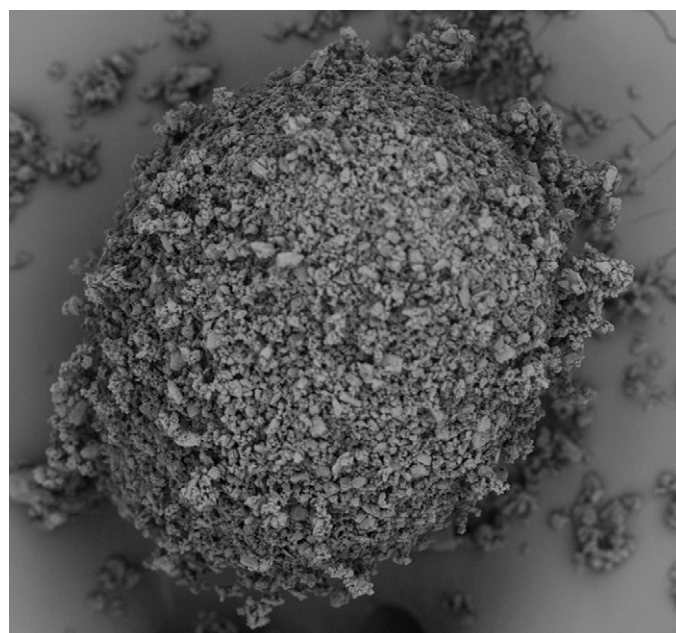
„In pharmaceutical technology, we are at a great interface between natural science and biomedical application. With this mediation between the disciplines, I would like to bring new perspectives to NINA,“ said Scherließ, explaining her commitment to the NINA SH board.

On November 24, together with other experts from science and industry, she will provide insights into the current status of vaccine development against Sars-CoV-2.



Regina Scherließ has been Professor of Pharmaceutical Technology and Biopharmacy and Managing Director of the [Pharmaceutical Institute at Kiel University](#) since 2017. She has been a member of the board of directors of NINA SH since July and enriches the initiative with her interdisciplinary expertise.

[The virtual focus meeting „Corona Vaccine - Impact of Nanotechnology“](#) will shed light on the development process in an interdisciplinary way, from the nanostructure analysis of the virus to nanoparticulate systems for drug transport and test systems to the production of a vaccine. The digital event is organized by NINA SH, WTSH, Life Science Nord and Kiel University. [Registration to the virtual meeting is available free of charge at \[www.nina-sh.digital\]\(http://www.nina-sh.digital\).](#)



Top: soft agglomerate („soft pellet“) of micronized active ingredient for inhalation delivery of high doses into the lungs.



Left: Device for determining the aerodynamic particle size distribution of nasal formulations.

More than just four walls for start-ups: the IZET Innovation Center Itzehoe

Extensive know-how in all aspects of company founding, versatile support and a network of flourishing high-tech companies: the [IZET Innovation Center Itzehoe](#) offers start-ups an optimal environment for the success of their innovative business ideas.

„We are the place of realization for young technology companies and start-ups. We not only offer space, but also advise with our experience regarding financing, suitable cooperation partners and exploitation aspects,” Professor Thiericke, managing director of the IZET, summarizes the offer of the Innovation Center. The IZET has access to an extensive network, which it actively maintains and links with other networks such as NINa SH. After many years of work in science and industry, Thiericke is particularly interested in the topic of start-ups: „Compared to metropolitan areas, the location of Itzehoe offers the advantage of much greater visibility. While a start-up in metropolitan regions is only one of many, the Minister of Economics can visit the IZET on occasion,” says Thiericke.

The IZET is the most important technology location in the West Coast region of Schleswig-Holstein. Due to the environment of the Innovation Center, the focus of the resident companies is on microtechnology, renewable energies and IT. With the young companies [Campton Diagnostics](#) and [OQmented](#), both spin-offs from the neighboring [Fraunhofer ISIT](#), two of the most prominent start-ups in Schleswig-Holstein are located at the Innovation Center. Both companies are working on cutting-edge topics such as new corona rapid tests and optical micro-scanners for virtual reality applications. IZET currently develops an additional technological focus area of en-



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Prof. Dr. Ralf Thiericke leads the IZET with his enthusiasm for technology transfer and entrepreneurship. Start-ups benefit from his many years of experience in science and industry as well as his extensive network.

ergy storage systems in the Innovation Park Itzehoe, which surrounds the IZET. Here, Fraunhofer ISIT and a number of companies such as [Custom Cells Itzehoe](#) form a rapidly growing location factor.

In addition to the 35 existing companies, there is still room at the Innovation Center, and Professor Thiericke invites: „All technology-oriented start-ups are welcome at the IZET who would like to realize their business idea in our supportive environment. Our local focus is best suited to integrate companies from the fields of micro- and nanotechnology, batteries and IT“.



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Geesthacht Innovation Center with new impulses

© GITZ GmbH



The new managing director of the GITZ, Dr. Marouane Sayih, has extensive experience in the fields of technology transfer and the founding of companies from his previous activities in Bavaria.

The new Managing Director of the Geesthacht Innovation and Technology Centre (GITZ), Dr. Marouane Sayih, has taken on the task of making the innovations of the future at home in the county of Lauenburg.

The [Geesthacht Innovation and Technology Center](#) offers an extensive range of services and consulting to start-ups and technology-oriented young companies. For over twenty years, the Innovation and Technology Center in Geesthacht was associated with the name Dr. Döhl-Oelze, who built the center into an attractive incubator just outside of Hamburg. Now he knows that the GITZ is in good new hands: „I am delighted that Dr. Sayih, with his experience from the „founding state of Bavaria“, will continue the GITZ business in the „Real North“. The new managing di-

rector Dr. Marouane Sayih, who holds a doctorate in computer science, has spent many years at the Center for Digitisation in Bavaria, promoting support for innovation and start-ups. There he experienced first-hand what strengthens the start-up landscape. In the future, Dr. Sayih intends to continue the successful work of the GITZ together with his team and at the same time expand it further. „I am counting on continuity in the good cooperation with our partners. My aim is also to provide new impulses and expand the network work“.

In the immediate vicinity of the Helmholtz Centre in Geesthacht, the GITZ offers young companies consultancy services and working space, from individual offices of 25 m² or more to office complexes, workshops and laboratories with the necessary infrastructure.

Highlights from the community

On this page, NINa SH presents recent highlights from the field of nanotechnology and news from science and industry. You can inform the network about your activities here, too. [Send your highlight to info@nina-sh.de](mailto:info@nina-sh.de).

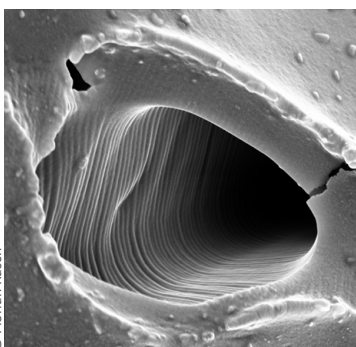


Nano Meets Medicine and NIBS 2021 conferences

After the annual international conference series [Nanotechnology and Innovation in the Baltic Sea Region - NIBS](#) this year was unfortunately cancelled due to Corona, the planning for the next NIBS conference in August 2021 is underway. The website nibs.nina-sh.de provides up-to-

date information on the program and registration. In addition, the [Nano Meets Medicine](#) focus meeting of NINa SH in cooperation with Life Science Nord and the University of Lübeck will be held on December 9th. Please register for free at www.nina-sh.digital.

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Innovative material for the treatment of brain tumors

Glioblastomas are among the most aggressive brain tumors in adults. Local therapy approaches with fewer side effects are being researched as a possible alternative to radiation and chemotherapy. To treat glioblastomas, scientists from CAU Kiel and UKSH recently presented an approach for a special silicone structure. Micro-

tunnels created in the silicone form a densely branched network that can be filled with different active ingredients. The structure then releases the active ingredients to the brain in a controlled manner over a long period of time. The study was published in the journal [ACS Biomaterials Science & Engineering](#).

Imprint

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