

Nanoparticle-based processes are among the key medical research technologies. They are already used in countless applications in medicine, medical technology and the pharmaceutical industry.

Nanotechnology is designed to help diagnose diseases earlier, get active ingredients to where they are needed in the body faster and improve implant tolerance.

In order to use nanoparticles in medicine, reproducible product characteristics need to be ensured and regulatory requirements met.

At present, hardly any suitable automation solutions are available for the complex process of producing nanoparticles.

The partners in the joint project are now developing a "flexible robotic platform for the automated production of nanoparticles", known as APRONA.

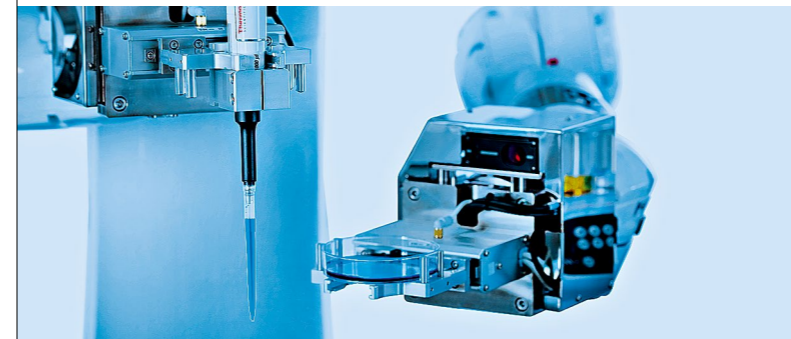
GEFÖRDERT VOM



Bundesministerium
für Bildung
und Forschung



aprona



**Flexible robotic platform for
the automated production of
nanoparticles**

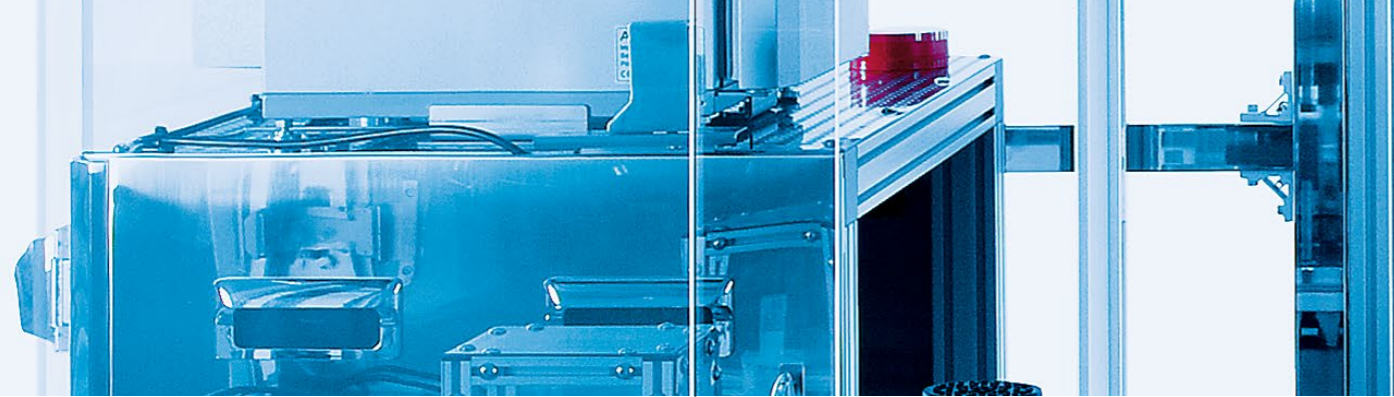
A joint project by



APRONA was launched in September 2017 to run for two and a half years with funding of approx. EUR 1.6 million as part of the initiative by the German Federal Ministry of Education and Research (BMBF) to promote SME-focused, strategic R&D partnerships in networks and clusters (KMU-NetC).

As part of the APRONA project, four project partners will be initiating automated production of nanoparticles for diagnostics and treatment.

Three small and medium-sized businesses from the STERN BioRegion are offering automation and life science expertise in the joint project. A Fraunhofer institute forms a link between these project partners from the engineering and material science and biotech industries.



Project partners

Goldfuss engineering GmbH, based in Balingen, specialises in special-purpose mechanical and systems engineering, with its "Lab automation" division designing complex solutions for fully automatic processes for sectors such as the life sciences.

Tübingen-based **Biametrics GmbH** develops and produces analytical devices for molecular interaction analysis. Its SCORE (single colour reflectometry) detection method can be used to detect any molecular interaction, for example in chemosensor technology to identify nanoparticles in consumer goods.

BioTeSys GmbH, from Esslingen, specialises in analysing and evaluating the impact of bio-active substances – in other words, examining a substance's functional properties, mode of action and effectiveness.

The **Translational Center Regenerative Therapies (TLC RT)** in Würzburg, part of the Fraunhofer Institute for Silicate Research ISC, pools expertise from a wide range of scientific disciplines such as materials research and regenerative medicine to apply it in a clinical setting.

Looking to the future

Highly controlled on-site nanoparticle synthesis that can be flexibly adapted to meet specific needs on a modular, versatile platform.

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Customised nanoparticle systems with narrowly defined specifications and short development cycles.

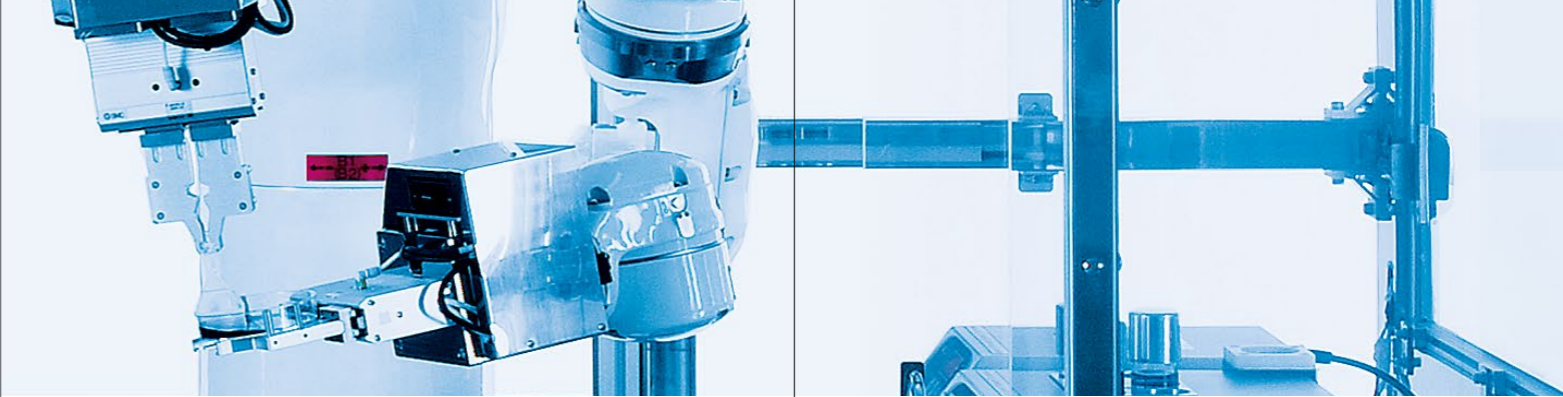
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Mobile robot stations for nanoparticle production in research or directly involving the patient. Digitalised contract production enables patient-specific, on-site treatment solutions.

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Customer-specific design and CE-certified systems engineering for GMP-compliant production of nanoparticles.

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What do we offer you?

As part of the APRONA project, we actively involve small and medium-sized enterprises in the innovation networks and their research institutes.

We support project partners in registering industrial property rights, implementing exploitation strategies and analysing market potential.

If you have innovative development ideas for combining automation with life sciences, get in touch with us! We're there for you. Good network connections begin with a one-to-one conversation.

BioRegio STERN Management GmbH is developing the corporate identity for the APRONA project, including the website, brochures and social media. Press releases provide continuous updates on the milestones achieved by the project.

The STERN BioRegion

BioRegio STERN Management GmbH promotes economic development in the life sciences industry, helping to strengthen the region as a business location by supporting innovations and start-up companies in the public interest. It is the main point of contact for company founders and entrepreneurs in the Stuttgart and Neckar-Alb regions, including the cities of Tübingen and Reutlingen.

Over 120 biotech companies and an equal number of medtech companies are based in the STERN BioRegion. In recent years, the number of jobs in the biotechnology sector alone has increased by more than 30 per cent.

The STERN BioRegion is one of the largest and most successful bioregions in Germany. Its unique selling points include a mix of biotech and medtech companies that is outstanding in Germany and regional clusters in the fields of automation technology and mechanical engineering.