

+ CHECKLIST

FROM LAB TO PRODUCTION.

How to overcome the critical bottleneck in particle synthesis and significantly accelerate your scale-up.



THE MARKET.

The transition of promising materials from the laboratory to industrial production is one of the largest bottlenecks in the process industry.

Many innovations fail not because of the idea, but due to the physical and economic limits of outdated production methods.

Nevertheless, sectors such as chemicals, paints, and construction materials still predominantly rely on traditional batch processes for scaling.

In terms of process engineering, these methods are difficult to reproduce. Every reactor behaves differently. Individual batches inherently produce quality variations.

Transferring processes from laboratory scale to large industrial reactors is often error-prone.



Upscaling processes take up to 2 years – massive loss of capital

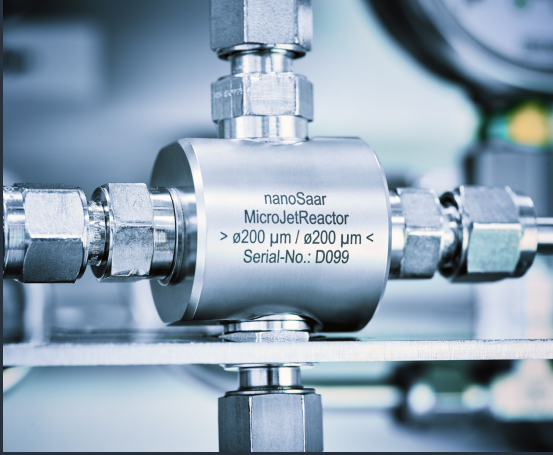


Every batch behaves differently – no reproducible quality



Long development times cost you the decisive competitive advantage

THE SOLUTION BY NANOSAAR.



The solution does not lie in optimizing existing methods, but in a fundamental technological rethink.

nanoSaar directly bridges the gap between laboratory development and industrial production.

Instead of conventional batch processes, a precisely controllable continuous process at the micro-level is created. This is based on the patented **MJR® technology**.

THE TECHNOLOGICAL CENTERPIECE:

MJR®

The technological heart is the **MicroJetReactor**. Although this component is only three centimeters long, it delivers significant process engineering advantages. In the compact mixing chamber, we generate exceptionally high turbulence within a minimal footprint for the manufacture of nanoparticles, emulsions, and encapsulated systems with precisely controlled particle sizes.

The result:

Consistent homogeneity.
From the first milliliter in the laboratory to several thousand liters in production.



PARADIGM SHIFT: TECHNICAL SUPERIORITY & ECONOMIC EFFICIENCY.

A paradigm shift in industrial production requires hard facts. nanoSaar's continuous production facilities demonstrate measurable advantages over conventional batch processes.

Up to 300 m/s Mixing speed	600 l/h Throughput per unit
10 nm - 20 µm Adjusted particle size	< 0.15 Polydispersity Index (PDI)

The solution saves massive amounts of time. Process parameter transfer from lab to production scale can be achieved **within days**.

At the same time, the space requirement is significantly reduced. Our MJR® reactors use the available space more efficiently.

Costs are also noticeably reduced. Continuous processes enable production on demand and reduce warehousing.

Additionally, sustainability is improved. Less energy-intensive processes reduce process costs and **CO₂ emissions**.



PRODUCTS AT A GLANCE.

The performance of the technology is demonstrated daily in demanding applications across various industries. The portfolio includes a range of additives tailored to specific industrial challenges.

In the **paint and coating industry**, even minor deviations can compromise product quality. For this sector, a dedicated additive for water-based systems was developed. It ensures high stability at different pH values, does not affect viscosity, and simultaneously increases color intensity.

Compared to conventional methods, a more efficient dispersion process enables lower production costs.



Reproducible quality is also crucial in the **construction industry**, even under demanding conditions. Specially developed additives are used to specifically improve the curing process.

Furthermore, applications extend from **corrosion protection**, **biocides** and **flame retardants** to **crop science** and **medical diagnostics**.





THE BENCHMARK-TEST FOR YOUR PRODUCTION.

Understanding how new process technologies apply to your specific operations is the critical first step. Put your current production to the test.

Does the transfer of your new material systems from the laboratory to the factory take significantly longer than seven days?	Yes / No
Do you regularly struggle with quality fluctuations during scaling and with new production batches?	Yes / No
Do your current batch facilities block massive floor space and prevent efficient use of your production facilities?	Yes / No
Do you lack process engineering capability for true just-in-time production, leading to enormous storage costs?	Yes / No

If you answered **"Yes" to any of these questions**, there is clear potential to strengthen your margins and competitive position - let's explore how together.

SOLUTIONS FROM DEVELOPMENT TO PRODUCTION.



The modernization of industrial processes often fails because of concerns about complex transitions and possible downtimes.

Therefore, it is not just about individual machines, but about holistic solutions that are seamlessly integrated into existing processes.

The approach covers the entire value chain. New processes are first developed in our own laboratory and then seamlessly transferred to existing production processes. The facilities are modular and can be easily integrated into existing control systems.

Setup takes place directly on-site, including training for your team.

Companies preferring not to invest can leverage our contract manufacturing services.

We handle the entire production process – from formulation to delivery. Covering a wide spectrum from small batches to multi-ton annual volumes.

The formulations are created in our own facility under controlled conditions and are reliably delivered in consistently high quality



TRUST OF LEADING COMPANIES WORLDWIDE.



Many different industries worldwide trust nanoSaar.
From chemicals to the construction and consumer goods industries.

They all faced similar challenges:

- Fluctuating quality
- Long development times
- Time-to-market

With MJR® technology, processes become stable, results reproducible,
and products reach market maturity faster.



THE NEXT STEP.

SCHEDULE A TECHNICAL CONSULTATION TO EVALUATE YOUR SPECIFIC MATERIALS.



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