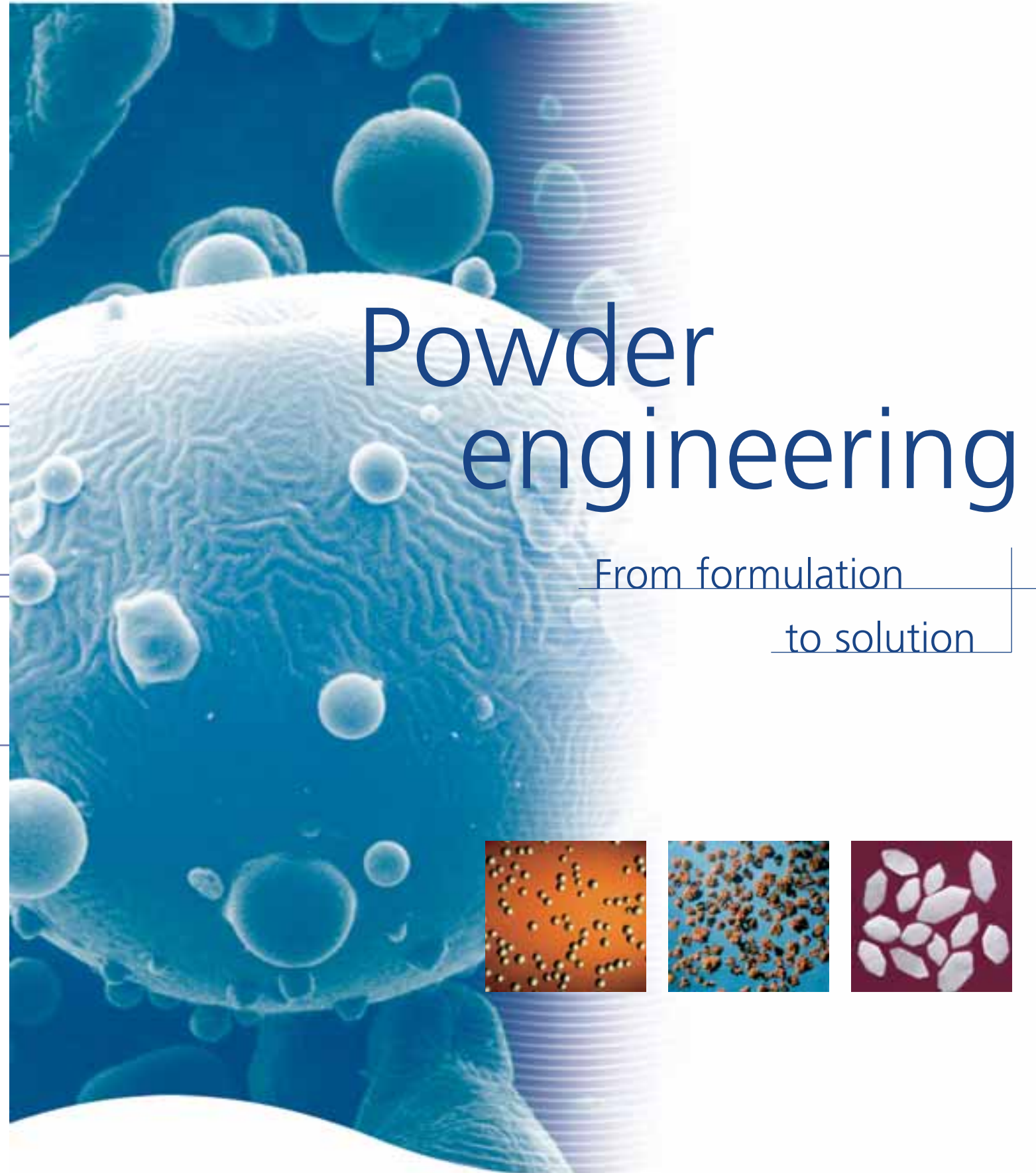


## Powder Engineering

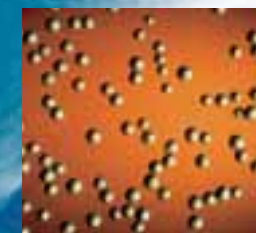
...from formulation  
to solution

Niro is a world leader in industrial drying, with spray drying, spray cooling, flash drying, granulation, and fluid bed processing as core technologies. Plants are supplied to main industries manufacturing organic/ inorganic chemicals, ceramics, detergents, dyestuffs, pigments, and polymers. The Niro companies are part of the Process Engineering Division of the GEA Group.



# Powder engineering

From formulation  
to solution



# Engineering the product

At first glance, drying seems like a simple, if necessary step in the production of many industrial chemicals. On closer inspection, however, it can be seen as one of the keys to unlocking the door to better, safer, cheaper, and even “greener” products.

No one knows more about the role of industrial drying in engineering high-performance powders than Niro. With data gleaned from 70 years of experience, plus a reference list of some 10,000 plants, it won't take us long to engineer the properties you want into your product, or the processes needed to produce them.

A drier powder? An easier flowing granulate? An agglomerate with fewer fines? Or maybe just a more competitive process. There's no quicker way to get from formulation to solution than by consulting the powder engineers at Niro.

And by solution, we don't just mean a recommended flow or suggestion to use a spray, flash or fluid-bed dryer—though we're the world's leading supplier of such equipment. We're talking powder. Niro operates over 75 pilot plants worldwide for application testing, and our test engineers and process technologists represent the largest pool of specialized talent ever assembled. You'll have the right product in your hands before you know it, for use in your own facility or in convincing customers you can produce exactly what they want.

*Niro tailors the drying process for the particulate size, structure, moisture content and other properties needed for your application. We call it powder engineering.*



Powders



Agglomerates



Granules

# Structuring the project

Now picture yourself in China or India. You've been working virtually with a team of Niro engineers in Europe and Brazil, and have a computer simulation of the process flow. Tests at a pilot plant in Japan look convincing. It's time to scale up.

This is the point at which organizational skill beats engineering talent. No matter how good the science, what you need now is structure.

Niro has time-tested procedures for taking projects smoothly all the way to completion. Every step is spelled out, every valve documented, every process validated. And it's all coordinated for you by an organization that implements hundreds of drying projects a year—a growing number of them in developing parts of the world.

Niro is also experienced at structuring financial packages. Our in-house project financing team can help you set up a complex financing scheme or a simple leasing contract. And our legal department can assist with tasks such as drawing up confidentiality agreements and ensuring that our equipment will not infringe third party rights.

Finally, Niro can help you address two of the industry's most pressing challenges: safety and environmental compliance. Our expertise in explosion-control design is unequalled—an invaluable aid whether you're looking at ATEX, other European safety directives or local regulations. What's more, we're a leading supplier of emission control systems for chemical plants.

*Niro is equally at home engineering powders of a few microns or plants covering thousands of square meters.*



# Extending the relationship



The average chemical drying plant is three months on the drawing board, half a year under construction and 30 years in operation, often on a nearly continuous basis. A reminder: What you really want isn't just a drier capable of producing x tons of powder an hour, but a partner who can keep your plant running like new.

See yourself (or your successors) a few years from now, when customer requirements or market conditions have changed. Or look farther down the road, to a tougher regulatory environment. When it's time for an upgrade Niro will be right by your side, helping you optimize product quality, energy efficiency, operational safety and environmental protection. We offer the most in-depth support of any supplier in the drying industry—programs designed to keep our solutions, and your drying process, as timeless as possible. Put it this way: we want you to stay in the relationship because you feel attracted, not locked in.

Above all, we believe service is a local business. With Niro, you never have to go far for assistance or overcome time or language barriers. We're there, wherever chemicals are processed. And not just with representatives, but with our own staff, stocks of spare parts, service engineers and training specialists.

For more information about Niro and our capabilities, services and equipment for chemical makers, please see [www.niro.com](http://www.niro.com).

*Niro will keep your drying plant up and running and up to date.*

