

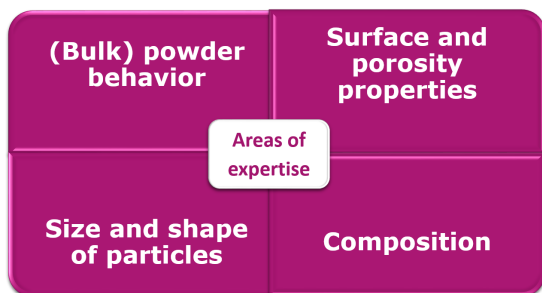
**EXPERTS IN POWDER TECHNOLOGY**

**Delft Solids Solutions** is a CRO specialized in the physical aspects of solid matter often in the form of powders and granules; typically how they are practiced in industry. We have over 40 years of experience in the expertise areas of porosity and surface area of solids, size and shape of particles, composition and solids behavior. Based on this expertise, we provide a wide range of unique services ranging from research of materials' properties, development of new techniques, methodologies and equipment, innovative research projects for materials development, consultancy in powder technology as well as expert courses and seminars on these topics. We offer these services to a variety of industries such as the pharmaceutical, chemical and petrochemical, automotive, food and feed, and building materials industry.

**Delft Solids Solutions** cooperates with national and international laboratories and institutes for complementary facilities and expertise. Since February 17<sup>th</sup>, 2013, the laboratory has been approved as validated supplier of nano particle characterization by the "Joint Research Centre" of the European Community.

**Areas of expertise in powder technology**

Our knowledge, expertise and laboratory infrastructure is built around particle and powder technology and can be divided into four main areas:



**Pillars**

Based on these areas of expertise we have divided our services into three basic pillars.

**History of Delft Solids Solutions**

Delft Solids Solutions is a privately-owned company founded in 2002. As a spin-off of the Delft University of Technology the original aim was to make the facilities and expertise on particle and powder technology accessible for the Dutch chemical industry. In early 2008, Delft Solids Solutions became a fully independent company with unique facilities and a world-wide focus.

**Research & development**

The core business of our research laboratory is to solve complex physico-chemical problems in materials science.

The infrastructure of our laboratory includes dedicated research set-up for studying flow behavior, shear, cohesive character of powders, dustiness, attrition and strength of particles, wettability and mixing and segregation of powders.

Our research laboratory furthermore employs a wide variety of more fundamentally oriented physical characterization techniques with particular emphasis on specific surface area of solids, adsorption, porosity and pore size analysis, density, chemical composition and particle size of solids, but also sprays and aerosols.



The majority of our methodologies can be executed according to various ASTM or ISO standards and on customers' specification. With our well-equipped laboratory we can guarantee high throughput

of samples and short turnaround times of typically less than 10 working days in case of analysis services. In addition to our recognized expertise in the field of adsorption and particle size measurements, we also execute research activities on the design and synthesis of hierarchical porous materials, in order to make a more efficient usage of these materials in adsorption and catalysis.



**Research & development of**

- ❖ Existing raw materials' and product properties
- ❖ New techniques, methodologies and equipment
- ❖ Reference materials and round robins
- ❖ Quality control
- ❖ Novel hierarchical porous structures

## Academy

In the particle technology academy, we have bundled our expertise thereby offering different options for knowledge transfer.

Every year we organize one or more open (two or three day) expert courses at our premises in Wateringen. These courses are typically at BSc to MSc level, but are also suitable for technicians, research assistants and technicians who have some working experience. On request we can customize our particle technology knowledge into an in-company course of which the topics addressed perfectly match the customer's requirements.



Besides our expert courses we also organize several one-day seminars (two to three times a year) on e.g. mixing and segregation of powders, granulation, dustiness and related powder processing topics.

Furthermore we transfer our knowledge by organization of- and participation in exhibitions and conferences.

Through the years we have (co-)written articles, white papers and newsletters. They have been bundled and are available through our knowledge center.



### Knowledge transfer by

- ❖ Expert courses
- ❖ In-company training
- ❖ Seminars
- ❖ Exhibitions and conferences
- ❖ Publications, white papers and newsletters

## Consultancy

Our multiple-year experience with Research & Development, the access to our research laboratory and the content of our knowledge center, enables to provide advice or assistance on many different matters related to solids (e.g. production problems, segregation and/or mixing issues, flow problems, hopper design, dustiness issues, etc.).



No matter what question you have or challenge you are dealing with, we will do whatever it takes to provide you with a practical - perhaps sometimes out of the box - solution to redeem (the change of) possible damage and/or have you focusing on your core business as soon as possible.



### Technical scientific advice and support through

- ❖ Trouble shooting
- ❖ Problem solving
- ❖ Patent infringement
- ❖ Validation
- ❖ Technical marketing

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