Imagine you had the unique chance to realize a technical solution for which the pharmaceutical, cosmetics or food industries as well as the chemical industry have been waiting for a long time. However, your company on its own is only able to provide part of the solution. Your next step is obvious: collaborate and combine forces. The magic word is cooperation. That is precisely the step that Yara, Raps, Natex and the Chair for Process Technology (VTP) of the University of Bochum have taken. The result is called COPRIS™ (Cooperation for the Advanced Production of Innovative Solids).

COMBINING FORCES

WHAT DOES COPRIS™ DO?

COPRIS™ stands for knowledge, research facilities, hardware, CO_2, and the possibility for commercial production. Within these fields, specific products and processes can be developed for clients on the basis of the PGSS (Particles from Gas Saturated Solutions) and CPF (Concentrated Powder Form) technology. These processes allow the production of powders which are normally very difficult, or even impossible, to manufacture like polymers, adhesives and fats. Powders with a liquid load up to 80 wt.% and mixtures of substances, which are otherwise impossible to blend, can be produced. Even micro-encapsulation and controlled release are within the large range of possibilities.

So COPRIS™ can offer you a solution that is complete in every respect.

SYNERGY, THE KEY TO SUCCESS

Natex is responsible for the hardware and the production of complicated CO_2 high-pressure equipment within the synergetic COPRIS™ collaboration. Raps, a supplier of herbal extracts and other food ingredients, is the patent holder of the CPF process, which is now globally renowned. Raps also owns the largest flavour laboratory in Europe. Yara Industrial is responsible for marketing, sales and project coordination. This leading listed company also produces and supplies artificial fertilizers, industrial gases, and nitrogenous chemicals worldwide. The fourth partner is the Chair for Process Technology (VTP) of the University of Bochum. This scientific support for R&D provides incentives for further applications.

Based on the CPF and PGSS technology innovative and new products and processes are developed. By the CPF process (Concentrated Powder Form) liquids are gently transformed into powder form without any loss of valuable constituents. The liquid is abruptly expanded via a nozzle into a spray tower. The result is a fine spray of tiny droplets at temperatures of -10 °C to 10 °C in a CO_2 inert gas environment. At the same time a powder carrier is added to the fine liquid spray which binds the tiny droplets and creates a free-flowing powder with a liquid content of up to 80 wt.% .

CPF AND PGSS

In the PGSS process (Particles from Gas Saturated Solutions) products such as liquid, i.e. melted single components, are mixed with carbon dioxide and then sprayed. The expanding gas splits the substances into tiny droplets which are instantly cooled.

A fine powder is created which opens up completely new application areas due to the possibility to adjust its size (from nanometers to micrometers), its morphology (sphere, hollow sphere, micro-foam, fibre, etc.), and its composition (blends of immiscible substances, liquid-filled composites, solid solutions).

HEALTHY BASIS FOR THE FUTURE

While others emphasize quality, service and competitiveness, COPRIS™ thinks in terms of added value. How can we develop and implement new processes based on innovative technologies that are actually needed in specific markets? When trying to answer this question adequately one has to be aware of the fact, that the market's needs have to be approached along a wider front.

This is why COPRIS™ focuses on research of PGSS and CPF applications which will result in new products our clients require. The solutions are not only ahead of their time, but also contribute substantially towards improving our customers' profitability.

In short, welcome to COPRIS™.

WWW.NATEX.AT
WWW.RAPS.DE/INTERNATIONAL
WWW.VTP.RUB.DE

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CPF TECHNOLOGY PGSS TECHNOLOGY

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COPRIS™ POWDER TECHNOLOGY

CHARTING THE COURSE TOGETHER

COPRIS™ POWDER TECHNOLOGY