



# 3/19

## CHEMIE TECHNIK in March:

- Process IT, automation, metrology
- Compressors, vacuum technology
- Bulk material and mixing technology
- Safety engineering, explosion protection
- Separation technology, filters

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# CHEMIE TECHNIK

## PROCESS IT, AUTOMATION, METROLOGY

### 1: Endpoint protection and cyber security training in the chemical industry

Thanks to the cooperation with the globally active cyber security expert Kaspersky Lab, the Donau-Chemie Group now has robust endpoint protection. In addition, extensive training of employees and IT experts has increased the effectiveness of cyber security.

### Fieldbus indicators as local windows into the process

Even in times of Industry 4.0, local indicators are still en vogue: they help plant operators to quickly obtain an overview of the situation in the plant. It is particularly clever if the indicators listen on the fieldbus and can pick up and display various measurement parameters.

### Diagnosis of control valves in accordance with the SIDAP data model

The evaluation of historical data for the analysis of control valves is currently a hot topic. With the SIDAP data model it is now possible to structure diagnostic data in a sensible way for further use.

### CT survey: will digitisation become a job killer?

It is becoming clear how digitisation will change chemical and plant engineering companies in the future. In our survey, we sound out the effects of digitisation on employees.

## COMPRESSORS, VACUUM TECHNOLOGY

### CT product focus on pneumatic conveying – compressors and compressed air technology

Bulk materials are often conveyed pneumatically in process engineering. The latest trends in pneumatic conveying are aimed at the particularly energy-efficient generation of conveying air. However, the treatment of conveying air also plays an important role. We report on novelties in this field.

### Combined heat and power generation with compressed air cogeneration plants

One of the reasons that compressed air is expensive energy is that its efficiency, from the primary energy source to the electricity and compressed air, is rather poor. An alternative is compressed air cogeneration plants, which are operated directly with gas engines instead of electricity. These permit significant cost savings if the heat is also used in the process.

## BULK MATERIAL AND MIXING TECHNOLOGY

### Novelties at Powtech

We report on new solutions and products for equipping bulk material processes.

### Particle detection for screen break detection

Control screening and fractioning play an increasingly important role in many industrial processes for bulk materials. The



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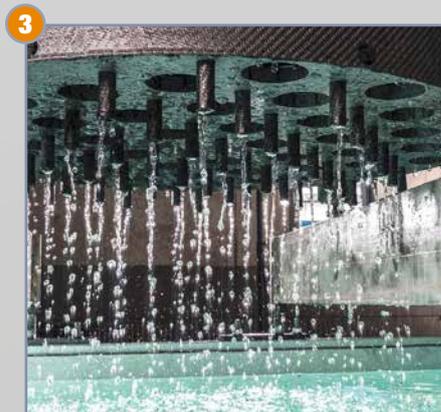


Image: Sulzer



sieves used and their reliability are decisive for quality and cost. Screen breaks cause high costs in continuous processes. In the event of a screen break, large quantities of screenings must either be destroyed or sieved again or the product even recalled. This is why the bulk materials industry has for a long time been looking for suitable solutions to detect faults in the screening process or faults caused by damage to the sieves used.

#### **Resonance conveyors:**

##### **all-rounder for lightweight bulk materials**

Resonance conveyors are especially suitable for conveying, screening and dewatering lightweight and sensitive bulk materials and piece goods in the food industry. They follow the principle of the dual mass vibration system and achieve high vibration amplitudes of the conveyor trough. Resonance conveyors are characterised by their compact design, low-noise operation, smaller drives compared with other systems and a wide range of options for designing the trough and screen.

##### **Containment in chemical and pharmaceutical processes – hands-on solutions**

Hermetically sealed production is becoming increasingly important - not least because of the increased requirements imposed by the REACH regulation. We report on new approaches, solutions and equipment for production under containment conditions.

##### **Digital project support in plant construction for bulk materials**

The digitisation of bulk materials technology first affects the engineering of plants. The dryer and bulk solids technology specialist Allgaier uses a virtual reality solution for this purpose. The system impressively demonstrates the benefits of digital planning already in the acquisition phase.

##### **CT product focus on screening machines**

Whether efficient cleaning, new screen fabrics or completely new designs - the manufacturers of screening machines will be presenting numerous innovations at Powtech. In our product focus we show the most important developments.

## **SAFETY ENGINEERING, EXPLOSION PROTECTION**

### **Automatic drum emptying for toxic/explosive powder products**

In connection with personal protection and a safer workplace, in mid-2015 a long-standing Dinnissen customer inquired into possible new solutions for automatically emptying 200 dm<sup>3</sup> drums containing toxic/explosive powder products. Previously the drums had already been emptied mechanically, but the employees had to wear gas masks when emptying the drums, which is not particularly pleasant in the long run.

### **Lithium-ion batteries for explosion zones**

Lithium-ion batteries in explosion-protected areas used to be considered unthinkable due to the fire hazard. A new technology now permits safe use in gas atmospheres (Zone 1) and dust atmospheres (Zone 21).

### **2: Flameless explosion venting in buildings**

Wherever flammable dusts are generated, plant operators must take special precautions against dust explosions. This is particularly tricky when pressure relief must take place inside buildings. Smart solutions have been developed for this problem in recent years.

## **SEPARATION TECHNOLOGY, FILTERS**

### **Self-cleaning filters in practical use**

To avoid disruptions, liquids must be continuously filtered for process cooling. A pharmaceutical manufacturer is relying on self-cleaning filters for this purpose and can thus significantly reduce maintenance costs.

### **3: Carbon fibre composite material for distillation columns**

Carbon-based products are used whenever other materials such as steel, aluminium, copper or plastic reach their limits in terms of their material properties such as temperature and corrosion resistance. Installations for separation columns made of carbon fibre composite permit the construction of plants with a higher capacity which can be operated with lower costs.