



# 5/18

**CHEMIE TECHNIK in May:**

- Plant engineering, plant planning
- Bulk material and mixing technology
- Pumps, compressors, vacuum technology
- Thermal process engineering
- Packaging, labelling

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# CHEMIE TECHNIK

## PLANT ENGINEERING, PLANT PLANNING

### Status quo of plant engineering in Germany

German plant engineering needs to master major challenges. In this contribution, we show how the industry has performed in the past year and what the strategic focuses are for the near future.

### Digitisation in plant engineering

The planning process is only the first member in a long chain of data technology which covers the entire life cycle of a plant. The target nowadays is the complete integration of all workflows – and this requires an extensive digitisation of the planning process.

### Universal marking solutions for plant engineering

In project business, the marking of plant components is an important feature, for example to avoid mix-ups on construction sites. Ranging from the virtual planning of markings to their installation, planning and marking software, various labelling systems and the large choice of different marking materials allow for an uncomplicated, universal and individual labelling process.

## BULK MATERIAL AND MIXING TECHNOLOGY

### Positive mixing

In view of the diversity and range of chemical products, customised mixing procedures are indispensable. Varying product properties and formulations necessitate more and more individual handling methods and mixing technologies. A holistic view of the requirements in the chemical industry helps to master the required processes in a reliable manner.

## SPECIAL IFAT 2018, THE WORLD'S LEADING TRADE FAIR FOR WATER, SEWAGE, WASTE AND RAW MATERIALS

### Interview with the Ifat Project Manager and VDMA General Manager Richard Clemens

An Ifat in the Achema year? Why should users from the chemical sector visit the trade fair in Munich nevertheless? Silvia Fritscher, Ifat Project Manager, and Richard Clemens, General Manager of the VDMA Process Plant and Equipment Association explain in an interview why a visit to the fair is worthwhile.

### Agitators made of super duplex mix waste water

At Covestro in Brunsbüttel, warm chemical waste water is temporarily stored in buffer tanks and must be continually mixed. The agitators used for this purpose must fulfil special requirements and reliably prevent the formation of deposits in the tanks.

### Documentation of the calibration of water analysers in the cloud

The calibration and documentation of sensors for water analysis in compliance with legal requirements is becoming ever more important. With the Claros Cloud solution an innovative software is now available to support the operators of measuring devices.

### Eccentric screw pumps and compressed air transport combined

The transport of sludge over long distances is an energy-intensive undertaking. Thanks to the combination of eccentric screw pumps and compressed air transport, energy use can be considerably reduced.

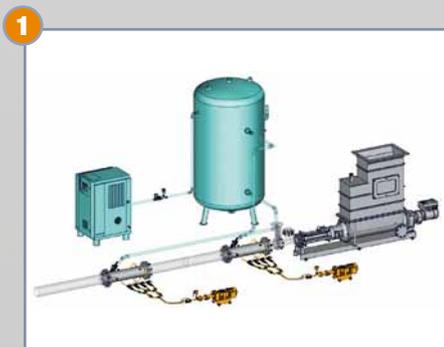


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Image: Busch Dienste

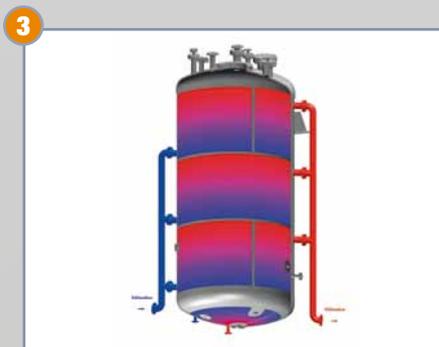


Image: LOB



### More throughput in sludge dewatering

The drier the sludge the lower the costs. This is why every per cent of moisture matters in sludge dewatering using decanters. A new decanter design now delivers particularly dry sludges.

## PUMPS, COMPRESSORS, VACUUM TECHNOLOGY

### Vacuum technologies compared

The choice of the right vacuum technology for applications in chemical and pharmaceutical process engineering often proves to be difficult. For one thing, a vacuum system must supply the required suction capacity at operating pressure and thus assure the required evacuation time. This contribution compares the most important vacuum technologies: liquid ring vacuum pumps, dry screw vacuum pumps and oil-lubricated rotary vane vacuum pumps.

### Harmonised pumps and centrifuges

Feeding glycerine contaminated with salt into a centrifuge requires both machines to be carefully harmonised. Corrosion protection in particular plays an important role.

### Sources of mistakes and their avoidance when using centrifugal pumps

Centrifugal pumps are the workhorses in chemistry. But where work is done, mistakes are made. This contribution describes the most common mistakes occurring during the operation of centrifugal pumps and explains how to avoid them.

## THERMAL PROCESS ENGINEERING

### Current solutions for industrial electric heaters

### Increasing the productivity of reactors using WTP inner jackets

In the chemical, pharmaceutical, cosmetics, textile and detergent industry as well as in petroleum processing, substances are used which are produced by means of batch agitation processes. These processes often require fast temperature changes where heat must be supplied or dissipated. Here, the use of WTP systems on the inside of the reactor makes technical and economic sense.

## SEPARATION TECHNOLOGY, FILTERS

### Ultrafilters in process water treatment

The extraction of process water from rivers necessitates sophisticated filtration technology. The Höchst Industrial Park employs special ultrafilter membranes for this purpose.

### Compact dust filters facilitate filter operation

The maintenance of dust collectors is often a tedious task: some systems are difficult to access and the filter elements are difficult to handle. A new filter design makes this task much easier.

### Safety in dedusting technology in accordance with REACH

After the supply and removal of production materials, the filtration of process dust is often the third largest mass flow beyond the process limits. A rigorously contained filtration is possible using explosion-proof filter systems, provided that both dust collection and filter change take place under appropriate containment conditions.

### Energy-efficient flue gas purification at Bitterfeld Chemistry Park

Numerous fans are used for exhaust gas purification of the thermal residual waste treatment at Bitterfeld-Wolfen Chemistry Park. These are controlled by frequency converters to optimise their energy consumption.

## PACKAGING, LABELLING

### Smart machines optimise packaging procedures

Packers must optimize their operational procedures to increase their productivity and secure their market position. This is why they expect plant engineers and mechanical engineers to develop packaging machines which fulfil two main purposes: they must fully exploit the transformative potential of smart manufacturing and support the more and more efficient packaging operations.

### Encoding of packaging with variable data by means of direct printing

The encoding of packaging with variable data by means of direct printing using permanent print heads saves money and material, as for instance shipping labels can be dispensed with. Also small print runs can be labelled, either by encoding with variable data or by printing self-adhesive labels in premium quality. Profitable printing is possible as of batch size 1.