

SEPTEMBER | AD CLOSE: AUGUST 5 | MATERIAL DUE: AUGUST 10



## UPCOMING FEATURES

### BONUS DISTRIBUTION

Experience POWER  
Distributed Energy Conference  
HydrogeNext  
Oct. 2-6, 2022  
Denver, CO

Powtech  
Sept. 27-29, 2022  
Nuremberg

### FOCUS ON E-NEWSLETTER

The September e-newsletter will cover WATER MANAGEMENT and deploy September 15.

## DOWNLOAD THE 2022 MEDIA KIT

### TOPIC: BURNER TECHNOLOGIES AND CONCEPTS: MEETING EMISSIONS-REDUCTION GOALS

#### FEATURE REPORTS

**Summary:** To meet bold sustainability targets and emissions-reduction standards, the burner industry is introducing many advanced technologies to help reduce emissions, particularly oxides of nitrogen (NOx). This article discusses several different burner technologies and control configurations, as well as operations strategies that can help to significantly minimize NOx emissions.

**Related equipment and services:** All types of burners, boilers and associated control equipment and instrumentation

**Relevant industries:** Most CPI sectors are concerned with NOx emissions, especially in petrochemicals and petroleum refining

### TOPIC: TEMPERATURE MEASUREMENT & CONTROL

#### FEATURE REPORTS

**Summary:** This article provides an overview of non-invasive skin-temperature measurement. After describing the difference between invasive and non-invasive methods, the operating principles of skin-temperature measurement is discussed, along with the benefits and new developments in the field. Several applications are also presented for fired heaters and steam methane reformers, along with benefits achieved. Finally, some practical information about proper installation and operation of skin-temperature devices is presented.

**Related equipment and services:** Temperature measurement and control systems

**Relevant industries:** All sectors that involve high-temperature processes, including petroleum refining, petrochemicals, fertilizer and more

## TOPIC: MODELING AND SIMULATION SOFTWARE

### NEWSFRONT

**Summary:** Digitalization is having an increasing impact on the chemical process industries (CPI). This is particularly true in the modeling and simulation software space. For decades now, steady-state asset modeling and process simulation tools have helped reduce engineering time and effort during the design/build/commission phase of a chemical plant's lifecycle. Dynamic process simulation models and advanced process control (APC) algorithms, in turn, have helped optimize both processes and process control in the much longer operational phase. Now, digitalization — and digital twins in particular — are helping provide a common modeling and simulation environment across both phases of the asset lifecycle. Digital twins are also helping “democratize” the technology, making it more easily accessible, understandable, and useful for a much wider range of personnel. This is described in more detail, along with some of the recent products that have been developed.

**Related equipment and services:** Simulation and modeling software, digitalization tools and data analytics

**Relevant industries:** All sectors of the CPI can benefit from simulations

## TOPIC: GAS DISPERSION

### FACTS AT YOUR FINGERTIPS

**Summary:** In gas-sparging applications, finely dispersed gas bubbles are introduced into a liquid in order to remove other dissolved gases or volatile materials. This one-page reference will discuss mass-transfer dynamics and process considerations for gas-sparging operations.

**Related equipment and services:** Spargers, pipes, tanks, bioreactors, compressors, blowers, sensors

**Relevant industries:** Spargers, pipes, tanks, bioreactors, compressors, blowers, sensors

## TOPIC: COMPRESSORS, FANS AND BLOWERS

### FOCUS

**Summary:** Moving large volumes of gases is a common operation at many CPI plants. Because such operations are energy intensive, equipment suppliers are always working on new technologies to make their machines more efficient. This month's Focus presents new products that have recently enter the market.

**Related equipment and services:** All types and sizes of compressors, fans and blowers

**Relevant industries:** Petroleum refining, petrochemicals, hydrogen, ammonia and fertilizer production, environmental and waste-water treatment applications, and more

Editorial material for consideration should be sent to senior editor Gerald Ondrey ([gondrey@chemengonline.com](mailto:gondrey@chemengonline.com))

## TOPIC: SOLIDS DRYING

### SOLIDS PROCESSING

**Summary:** Moisture control of solid materials through drying plays a critical role in CPI. Because of the diversity of solid-material properties, process and product requirements and environmental and economic considerations, it can be challenging to determine which type of drying equipment best suits a given application. This article will provide a basic primer on the features and functions of different types of dryers to help with equipment selection to match the application needs.

**Related equipment and services:** All types of solids dryers and related drying equipment and systems, including rotary dryers, spray dryers, flash dryers, fluid-bed dryers and moisture sensors

**Relevant industries:** Food, pharmaceuticals, fertilizers, solid catalysts, chemicals, polymers and others

## TOPIC: RESHAPING PLASTIC WASTE

### APPLIED TECHNOLOGIES

**Summary:** The problem of plastic pollution has made many headlines, as huge amounts of plastic waste in the environment are threatening Earth's ecosystems, and even pose a threat to human health. But end-of-life plastics can serve as a valuable resource when specifically treated in dedicated processes. A new solution that leverages this waste and produces input material for creating clean and recycled plastics could provide a promising avenue for these wastes. This patented chemical recycling technology uses a thermal anaerobic conversion (TAC) process to treat plastics that cannot be mechanically recycled. This article describes the application of automation systems to ensure smooth operations at two recycling plants in constant operation in Spain.

**Related equipment and services:** Plastics recycling technology, process control systems

**Relevant industries:** Petrochemicals and plastics industries

## TOPIC: DISTILLATION

### THE TOWER DOCTOR

**Summary:** The Tower Doctor presents lessons learned from actual troubleshooting experiences by a distillation expert. This installment investigates a question regarding the use of structured packing versus trays.

**Related equipment and services:** All distillation column internals

**Relevant industries:** All sectors of the CPI that use distillation

## EVENT: HYDROGENEXT

### SHOW PREVIEWS

Hydrogen has emerged as major player in the energy transition, providing a solution particularly useful for addressing hard-to-abate industrial applications. Some of the solutions being considered for clean hydrogen include chemicals manufacturing, power generation, natural gas blending, renewable energy storage, transportation fuel, steel manufacturing and synthetic fuel production. These will all be discussed at this year's HydrogeNext conference and event, which will take place in Denver, Colo. October 3–6.

**Related equipment and services:** All types of equipment used to handle hydrogen and other gases

**Relevant industries:** All CPI sectors use hydrogen

## EVENT: POWTECH 2022

### SHOW PREVIEWS

**Summary:** The Tower Doctor presents lessons learned from actual troubleshooting experiences by a distillation expert. This issue looks at brainstorming that led to applying quantitative scanning to distillation columns.

**Related equipment and services:** Distillation column internals, scanning techniques for column troubleshooting

**Relevant industries:** All sectors of the CPI that use distillation

Editorial material for consideration should be sent to senior editor, Gerald Ondrey ([gondrey@chemengonline.com](mailto:gondrey@chemengonline.com))

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