

NOVEMBER | AD CLOSE: OCTOBER 8 | MATERIAL DUE: OCTOBER 12



Upcoming  
Features

## FOCUS ON E-NEWSLETTER:

The November e-newsletter will cover VALVES and deploy November 11.

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## TOPIC: IMPROVING A THERMAL LOOP: THE POWER CONTROLLER

### FEATURE REPORTS

**Summary:** For any process where temperature needs to be monitored or controlled, a thermal loop is required. Typically, a process that contains a thermal loop includes some key elements: the process itself, the temperature sensor and/or transmitter (often a thermocouple or RTD plays this role) the temperature controller and the power controller. The goal of the thermal loop is to detect the temperature of the process, and then control it based on certain fluctuations that happen along the line. This Feature Report discusses the importance of the power controller for improved temperature control.

**Related equipment and services:** Temperature sensors, process controllers

**Relevant industries:** All CPI sectors require temperature control

## TOPIC: PILOT PLANT CONSTRUCTION PLANNING

### FEATURE REPORTS

**Summary:** Reduced in-house resources have limited the options many organizations have for designing and constructing pilot plants. The increased complexity and intricacy of modern pilot plants also frequently push the expertise and resources of many organizations. These factors often force companies to reach outside for assistance in designing and contracting a new pilot plant. Understanding the pitfalls that can arise even with qualified contractors can make the project go much easier.

**Related equipment and services:** Project planning and management tools, process design and simulation tools, cost estimation tools

**Relevant industries:** Pilot plants are used in all sectors of the CPI.

## TOPIC: WATER TREATMENT

### NEWSFRONT

**Summary:** As part of ongoing environmental sustainability efforts, CPI companies are taking a holistic approach to water management to overcome challenges, which includes state-of-the-art equipment, new eco-friendly chemicals and advanced analytics, all of which help to better manage water use and electricity consumption associated with treatment.

**Related equipment and services:** All types of process equipment and chemicals used in water treatment, including treatment chemicals, membrane, reactors, microbial-control technologies, and so on; Software and devices used for process control and data analytics

**Relevant industries:** All sectors of the CPI are concerned with water management

Editorial material for consideration should be sent to contributing editor Joy LePree ([jlepree@chemengonline.com](mailto:jlepree@chemengonline.com))

## TOPIC: PERSONAL PROTECTIVE EQUIPMENT (PPE)

### FACTS AT YOUR FINGERTIPS

**Summary:** Safety eyewear is required in many industrial process and chemical laboratory settings. This one-page reference will provide information on the potential eye hazards commonly found in the chemical process industries, and the selection of proper eye and face protection products.

**Related equipment and services:** Safety glasses, safety goggles, face shields, hardhats and other types personal protective equipment

**Relevant industries:** All industry sectors use protective eyewear and other PPE

## TOPIC: PRODUCTION OF VINYL ACETATE

### TECHNOLOGY PROFILE

**Summary:** Vinyl acetate is an industrially important vinyl ester that is used extensively in a range of polymers and resins. The dominant production route for vinyl acetate is based on the reaction of ethylene with acetic acid and oxygen. This one-page process summary will outline the production process for vinyl acetate.

**Related equipment and services:** All general process equipment and machinery, including reactors, distillation columns, pumps, valves, wastewater treatment systems, catalysts, and more

**Relevant industries:** Chemicals, petrochemicals, polymers, pulp and paper, textiles

## TOPIC: LEVEL MEASUREMENT AND CONTROL

### FOCUS

**Summary:** Level is one of the four main process variables that needs to be monitored and controlled in the CPI. This month's Focus presents the latest new products and services related to level measurement.

**Related equipment and services:** All types of level sensors, transmitters and controllers

**Relevant industries:** All sectors of the CPI monitor and control level

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

## TOPIC: PARTICLE SIZE CONTROL

### SOLIDS PROCESSING

**Summary:** Particle attrition — particle breakage, fragmentation and fines generation of solid materials, where it is not desired or designed — occurs in many types of solids-handling processes. Attrition can cause problems ranging from dust hazards and process upsets to reduced product quality. This article will discuss the mechanisms of particle attrition and strategies to minimize it within solids-handling processes.

**Related equipment and services:** Solids handling equipment, including pneumatic conveying systems, chutes and conveyors, hoppers, dryers, fluidized beds and others

**Relevant industries:** Chemicals, foods, pharmaceuticals, mining, agriculture, biomass and others

## TOPIC: ION-EXCHANGE MEMBRANES

### ENGINEERING PRACTICE

**Summary:** Ion-exchange membranes are used in numerous industrial processes, including water desalination, electrodialysis and the production of the commodity chemical chlor-alkali. The membrane's materials of construction play an extremely important role in its performance in a given application. For example, ion-exchange membranes based on perfluorinated sulfonic acid (PFSA) polymer show high performance under severe operating conditions. This article describes the development and industrial application of PFSA ion-exchange membranes in legacy processes, such as chlor-alkali, and emerging applications, such as renewable energy and redox-flow batteries.

**Related equipment and services:** All types of ion-exchange membranes

**Relevant industries:** Ion-exchange membranes are used across the CPI, especially in commodity chemicals, water treatment and generation, renewable power and energy storage

## TOPIC: INDUSTRIAL-GRADE LED LIGHTING

### APPLIED TECHNOLOGIES

**Summary:** Save and efficient lighting is often overlooked at a CPI process plant and the surrounding site. And yet poor lighting accounts for a considerable number of accidents and other safety incidents at CPI production sites. This month's Applied Technologies department presents an overview of LED lighting and its benefits, as well as a specific example at a chemical plant.

**Related equipment and services:** All types of industrial lighting

**Relevant industries:** All CPI sectors need to use industrial lighting

## MARKETING RESOURCES

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