

### FEATURE REPORTS

#### Make Pump Maintenance Mandatory

**Summary:** Pumps used in the chemical process industries (CPI) are subjected to a wide variety of operational conditions, such as changes in ambient temperature and humidity; varying volumes and flowrates; varying product viscosities; and line shocks from piping, to name a few. This article demonstrates how attention to a strict maintenance routine can keep pumps running reliably in these challenging environments.

**Related equipment and services:** All pumps used in the chemical process industries

#### A Practical Guide to Liquid Filtration

**Summary:** This Feature Report provides a comprehensive overview of liquid filtration. The article covers basic laboratory testing methods that can be performed before selecting a filter; a discussion of filter types and how to select the right type for your process; and troubleshooting and preventive maintenance of liquid filtration systems.

**Related equipment and services:** All types of filter systems (basket, plate-and-frame filter press, horizontal leaf, tubular, rotary drum, bag, Nutsche, cartridge, and so on); filtration aids, filter media (paper, textile, felts, metallic, porous or sintered, and so on)

### Signet Study Issue!

All 1/2 page or larger advertisers will have their ad studied and will receive a custom report with verbatim comments from the CPI.

### NEWSFRONT

#### 2011 Kirkpatrick Award

**Summary:** This article will focus on the technologies commercialized by the winners of this year's Kirkpatrick Award from *Chemical Engineering*.

**Related equipment and services:** Equipment and services related to the award finalists' technologies —VOC treatment, KOH production, alkylation monitoring, microchannel reactions

#### Gas Detection

**Summary:** This month's equipment Newsfront will present the latest new products and technologies for detecting gases both inside the process and in the surrounding area around the plant.

**Related equipment and services:** All types of gas detectors, monitors, sensors, data loggers, and so on

Submit editorial material for consideration to contributing editor Joy LePree (jlepree@che.com).

### FRACTIONATION COLUMN

**Summary:** This monthly column in *CE* is written by the technical director at Fractionation Research Inc., a consortium of end-users, engineering companies and distillation equipment providers that pool budgets on distillation research.

**Related equipment and services:** Distillation towers, trays and packings, tower scanning equipment and services

### FACTS AT YOUR FINGERTIPS

#### Steam Handling

**Summary:** This one-page reference will cover key aspects of improving the efficiency of steam handling systems.

**Related equipment and services:** Steam systems and related equipment, steam generators, boilers, steam traps

### ENGINEERING PRACTICE

#### Transfer Units Remove Mystery and Bring Clarity to Packed Column Design

**Summary:** This article discusses the use of Transfer Units as opposed to Theoretical Stages in the design of packed columns. HETP values are a contentious question in packed-column design; everyone can understand HETP, but no one wants to set an HETP value. The HETP concept is simple and useful for process design, but it is fundamentally flawed for describing mass transfer, so HETP values are highly desired, but elusive. The fundamentally sound concept of "Transfer Units" takes effort to learn, but provides consistent and dependable answers for understanding packed columns.

**Related equipment and services:** Distillation and extraction equipment including tower packing and column internals

### SHOW PREVIEW

#### ChemShow 2011

**Summary:** Short descriptions of products and services scheduled to be displayed on the exhibit floor at the 2011 Chem Show in New York (Nov. 1–3).

**Related equipment and services:** All exhibitors' products and services

### OPERATIONS & MAINTENANCE

#### Protecting Electric Motors from Moisture

**Summary:** Prevention of moisture ingress into electric motors maximizes equipment uptime. Shaft-sealing and bearing-protection devices can be used to prevent moisture and debris from entering the motor. The effectiveness of such devices can be evaluated using the Ingress Protection code.

**Related equipment and services:** Electric motors, shaft seals, bearing protection systems; O-rings, gaskets, elastomers used to make seals and gaskets

### SOLIDS PROCESSING

#### Characterizing Powder Flow in a Relevant Way

**Summary:** To confidently design, operate and troubleshoot processes involving solids-handling equipment, engineers need to accurately characterize powder attributes (such as particle size, shape, surface roughness or density) and use the information to optimize flow. This article discusses how to use a range of universal powder-testing devices (which conduct tests to assess bulk, shear and dynamic properties), in order to assess powder characteristics and use the information to improve operational performance.

**Related equipment and services:** Solids-processing equipment, bins, vessels & hoppers, feeders, scales and weighing systems, powder rheometers, vibration systems and other flow aids

#### LOOK FOR THESE ARTICLES COMING IN THE NOVEMBER ISSUE

##### Feature Report

Valves  
Energy Efficiency

##### Equipment Focus

Pipes, Tubes and Fittings

##### Equipment News Roundup

Dust Control

##### Facts at your Fingertips

Level Measurement