

FEATURE REPORTS

Correct Control-Valve Selection

Correct control-valve selection is a critical part of successful process control and has direct effects on a plant's efficiency, yield and profit — a control valve's role in the plant should not be overlooked. Control-valve selection must be based on real process conditions and application demands. This article will cover some recommendations for optimizing control valve applications.

Related products and services: Control valves and their accessories, such as positioners, actuators, piping components, gauges, indicators and control software

Relevant industries: Valves are pertinent in all CPI sectors.

A Primer on Reverse Osmosis

Reverse osmosis (RO) is a key technology for removing dissolved species from water to provide new water resources. This article reviews the state of the art in reverse osmosis for industrial water treatment and wastewater treatment. It will review currently available systems, recent technological advances and future prospects for the technology.

Related equipment and services: Reverse osmosis membranes, and related equipment and systems for RO, alternative desalination equipment, water treatment technology, anti-corrosion coatings

Relevant industries: Virtually all CPI sectors use water for their processes and facilities, and would benefit by understanding desalination technologies, especially in water-stressed regions.

FRACTIONATION COLUMN

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

Relevant industries: This column addresses segments across the entire CPI, and is relevant in the currently booming markets of downstream oil-and-gas processing.

SIGNET STUDY ISSUE

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NEWSFRONT

Spotlight on Methanol

Methanol is playing a key role in many announced projects because it can be made from synthesis gas (made by steam reforming of methane, a major component of unconventional gas), and then converted to polyolefins and other petrochemicals via methanol-to-propylene processes. This month's first newsfront will present the latest process technology for making methanol, as will discuss the impact of low-cost unconventional gas (from the shale-gas boom) on the methanol and petrochemical markets.

Related equipment and services: Process technology, catalyst technology, reactor technology, gas processing and cleaning technology

Relevant industries: Chemicals, petrochemicals and petroleum refining

Editorial material for consideration should be sent to senior editor, Gerald Ondrey (gondrey@che.com)

Sustainable Packaging

The second Newsfront will look at how chemical producers and packaging companies are working together to make their products more sustainable.

Related equipment and services: Process technology for making resins and other packaging materials, packaging machines, labeling

Relevant industries: All sectors of the CPI use packaging to sell their products or to receive and store ingredients needed to make those products.

Editorial material for consideration should be sent to contributing editor, Joy LePree (jlepree@che.com)

FACTS AT YOUR FINGERTIPS

Cryogenic Materials

Gases such as nitrogen, helium, argon, methane and others in their liquid form are encountered within various sectors of the CPI and present a unique set of personnel safety hazards. This one-page reference will review the properties of various cryogenic materials and outline procedures for handling and using them safely.

Related products: Air-separation units and equipment, liquid nitrogen tanks, dewers, pressure gages, personal protective equipment,

including gloves, goggles and others

Relevant industries: Liquefied cryogenic gases are used in various places within the CPI for reaction cooling and fine-chemicals synthesis, and are used in some size-reduction technologies. Also, natural gas is liquefied as LPG for transport

FOCUS

Automation and Controls

This month's Focus will present the latest new products and services in process control and automation technology.

Related products and services: Process control systems; sensors and transmitters (pressure, level, temperature and flowmeters); and much more

Relevant industries: All sectors of the CPI use process control and the associated instrumentation.

Send editorial material for consideration to senior editor Gerald Ondrey, (gondrey@che.com)

ENGINEERING PRACTICE

Plan Ahead to Improve Capital-Intensive Projects

This article profiles a variety of steps that can be taken to reduce capital expenditures and operating costs and shorten schedules without compromising design quality. Engineering teams that have followed the proven engineering recommendations and management and planning strategies discussed here — such as setting clear, measurable objectives, creating competing design options, developing detailed project schedules and plans, involving experts from key disciplines, and more — have been shown to achieve statistically relevant improvements in many key areas.

Related equipment and services: Process equipment, including piping, control systems, instrumentation, modeling software, project-

management consulting and engineering and design consulting

Relevant industries: Project management is relevant to all segments of the CPI.

ENVIRONMENTAL MANAGER

Dust Control in the Chemical Processing Industries

Dust in the CPI creates issues in numerous types of processes and equipment. Correctly handling dust is critical in prevention of explosions, fire hazards and potentially unhealthy or toxic conditions for personnel. This article explores recent regulations and incidents related to dust hazards, and also examines physical characteristics and considerations regarding the various different types of dust. Also outlined are some recommendations for hazard mitigation.

Related equipment and services: Dust control systems and devices, including filters, collectors and so on; dust suppression methods, such as wet suppression systems, dust prevention, fire prevention

Relevant industries: Most sectors within the CPI have to consider dust control, but it is particularly important to those engaging in solids handling. This could include food, pharmaceuticals, mining, inorganic chemicals, and any place where solids are ground, milled or handled.

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July 17, 2014

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