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FEATURE REPORTS

The Two Worlds of Process Control

Summary: Process automation has evolved into two very distinct automation “worlds.”

One is the big control companies that offer “one-stop shopping.” All will supply the hardware and software as a system, and will subsequently maintain it. Most also supply application services and support. This is the favorite of the engineering organizations within the major companies – they can outsource everything.

The other is a “roll-your-own” approach that is now largely based on PLCs, but occasionally on single-loop microprocessor-based controllers. In industries like seasonal foods, costs must be contained, which makes large investments in automation difficult to justify. PLC suppliers are largely component suppliers. Someone must purchase the components and then make them work together. However, smaller organizations find that this is the only option that they can afford.

This month’s Feature Report will discuss these two automation “worlds” and provide practical advice on how to operate within them.

Related equipment and services: All types of process automation equipment

Evaluating Methods for Capital Cost Estimation

Summary: Capital cost estimation is an important aspect of project planning and is an essential factor in process/plant design. It is also required for the capstone design project carried out by chemical engineering students, typically in their last semester, in many parts of the world. Currently, there are several methods and computer programs for estimating capital cost. The main objective of this article is to provide a general evaluation of these methods/programs for preliminary chemical process design.

Related equipment and services: Capital cost estimation computer programs

FOCUS

Rupture Discs and Pressure Relief

Summary: This month’s focus will present the latest new products for overpressure protection.

Related equipment and services: Rupture discs, pressure-relief valves, pressure sensors and transmitters

To be included in this focus, please send editorial material to senior editor Gerald Ondrey: gondrey@che.com

NEWSFRONT

The Bio-Based Economy

Summary: As the chemical process industries (CPI) work toward developing truly sustainable processes, they are looking more closely at bio-based raw materials and at increasing efficiency of their processes. This newsfront covers a snapshot of these efforts that are underway, particularly in the Netherlands, and includes various technologies, such as: developing reactors for growing algae as a feedstock; making biomethanol from glycerin (a byproduct of biodiesel production); developing a simplified process for producing lactic acid; and more.

Related equipment and services: Reactors, fermentation equipment, separation and purification equipment, particularly those suitable for pilot-plant work; engineering firms that design scale up of new and modified processes

Analyzers

Summary: Measuring the chemical components in a chemical process is an important part of process optimization as well as quality control during production. In the past, identifying compounds and their concentration during a reaction had been the task of laboratory analyzers, with measurements performed on samples in analytical laboratories. Today, many of the classical laboratory analyzers are available as rugged, compact units that can be operated inside the production plant, online, to deliver realtime measurements. This month’s Newsfront will discuss the latest in analyzers for process control.

Related equipment and services: Analyzers for inline and online measurement and control, such as spectrometers (UV-VIS, IR, NIR, Raman, X-ray, and so on), chromatography analyzers, and more

To be included in this focus, please send editorial material 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

SOLIDS PROCESSING

Drying

Summary: This article will present practical, best practices for drying operations.

Related equipment and services: Dryers, evaporators, and bulk solids equipment in general

FACTS AT YOUR FINGERTIPS

Heat Transfer

Summary: This one-page reference will cover cleaning organic heat transfer systems.

Related equipment and services: Heat exchangers, heat transfer fluids, all heat-transfer-related equipment

ENVIRONMENTAL MANAGER

Green Chemical Engineering

Summary: Today, many chemical engineering activities are inherently "green," as they employ optimization that seeks to reduce energy and raw materials use, and produce less waste. This article discusses how green practices can not only benefit the environment, but help the company's bottom line and improve overall profitability, too.

Related equipment and services: Consulting, software and equipment related to environmental, health and safety issues, achieving zero emissions, modeling raw-materials substitution, process optimization, energy efficiency and more

CHEMINNOVATIONS SHOW PREVIEW

ChemInnovations 2011 preview I

Summary: Short descriptions of presentations that will be made as part of the "Chemtator Lightning Round" at the 2011 ChemInnovations Conference and Trade Show, in Houston.

Related equipment and services: Products of the companies mentioned

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