



### FEATURE REPORTS

#### Batch Management Technology for Improved Business Results

**Summary:** Control system performance can significantly impact a plant's bottom line. Unfortunately, as technology has advanced, legacy batch control systems can no longer meet corporate objectives that include production agility, production reliability, reporting and sharing of business information. Nor can they provide sophisticated control capabilities that enable increased throughput, lower costs and improve regulatory compliance while responding to demands for better product quality and faster delivery cycles. This month's feature report will discuss the recently introduced concept of embedded batch, and how moving batch execution into the controller itself can streamline the process, and thus improve business results.

**Related equipment and services:** Batch control software, batch control hardware (controllers, I/O connections, etc.), all types of batch equipment (reactors, mixers, sensors, pumps and valves).

#### Improved Management of Project Information Reduces Risk

**Summary:** The field of information management continues to struggle with improving quality and reducing costs in large capital projects. This article discusses the information management challenges associated with handover of large capital projects that are faced by owner-operators and project managers. The article also introduces a model for reducing risk.

**Related equipment and services:** Engineering, procurement and construction (EPC) firms, risk management products and services, project management services, information management products, software and services.

### FOCUS

#### Compressors

**Summary:** A collection of short description of compressors suitable for use in the chemical process industries.

**Related equipment and services:** Reciprocating compressors, screw compressors, fans, blowers.

Send editorial contributions to Associate Editor, Scott Jenkins at [sjenkins@che.com](mailto:sjenkins@che.com)

### NEWSFRONT

#### Technology Showcase

##### Biotechnology-based chemicals

**Summary:** Biotechnology-based chemical production is experiencing double-digit growth. The overall volume is small compared to other chemical production, but the rapid advances in industrial biotechnology, coupled with a significant increase in the price of crude oil, is fueling an increase in the number of biotechnology-based chemicals reaching commercial production. This article will summarize SRI Consulting's Biotechnology-Based Chemicals report providing a global overview of the sources, market size and application areas of thirty-seven bio-based chemicals. Within these chemicals, six products produced through direct fermentation include more-detailed market analysis. Industry structure, business environment, producers, markets, trends, issues and factors impacting the future development of business are provided for citric acid, glutamic acid, lactic acid, lysine, polyhydroxyalkanoates, and threonine.

**Related equipment and services:** All equipment and services targeted for biotechnology applications, including, but not limited to fermentation equipment, and separation and purification equipment such as cell separation equipment, ion exchange, evaporation, crystallization and drying; also alternative process chemicals that are based on biotechnology.

##### Pumps

**Summary:** In recent years it has become clear that the purchase price is a small fraction of a pump's lifecycle costs. The bigger lifecycle costs are energy and maintenance costs. This month's Newsfront article will present the latest diagnostics technology available for extending a pumps mean-time-to failure, as well as technology for reducing a pump's energy consumption.

**Related equipment and services:** All types of pumps, seals, bearings, motors, pump controllers, variable speed drives, pump systems and diagnostics features.

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### 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.

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### FACTS AT YOUR FINGERTIPS

#### Temperature Measurement

**Summary:** This one-page reference will discuss the use of non-contact radiation-based temperature sensors in situations where resistance temperature detectors (RTDs) and thermocouples are not practical.

**Related equipment and services:** Temperature sensors, IR thermometers.

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### ENVIRONMENTAL MANAGER

#### Chemical Protective Clothing

**Summary:** Chemical protective garments are available in a wide variety of fabrics and designs that provide varying levels of protection for workers in the chemical process industries (CPI), who may be exposed to chemicals in the form of vapors, liquids or particles. While other forms of personal protective equipment — such as safety glasses and hard hats — are highly regulated in the U.S. and Canada, the performance of chemical protective clothing currently is not. An international standard for classifying chemical-protective-clothing performance, however, is available — ISO 16602. This article shows how ISO 16602 can be used as a tool to help with the selection of appropriate chemical protective clothing by providing an objective means of defining the performance of chemical protective apparel worn by workers in situations involving potential exposure to chemical hazards.

**Related equipment and services:** Clothing used for protection during chemical handling including gloves, shoes and boots, HAZMAT suits and more; other personal safety related products, such as hearing protection, helmets, goggles safety showers, personal gas monitors and so on.

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### INTERPHEX SHOW PREVIEW

**Summary:** This preview will contain descriptions of some of the products and services that will be featured on the exhibit floor at Interpex 2011, North America's largest show for the pharmaceutical and biologics manufacturing industries. The show will be held in New York from March 29-31.

**Related equipment and services:** Pharmaceutical manufacturing equipment, biological product manufacturing equipment, pristine processing products, one-use reactors and other disposable equipment.

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