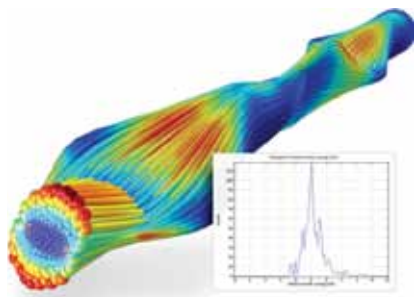# Software & Information Technology

Software Boosts Multiphysics Modeling Capabilities

Multiphysics Version 4.2a is a modeling and simulation platform that offers application-specific add-on modules for multiphysics analyses. A new particle-tracing module computes the trajectory of particles in a fluid or electromagnetic field, and models particle-field interactions. The user can assign forces, variables, and equations to act on the particles whose mass, charge, and other quantities change along their trajectory. Images may originate from scanning electron microscopes (SEM), computed tomography (CT), or magnetic resonance imaging (MRI), among others. This software also supports Digital Elevation Map (DEM) import for topographical surface and geophysics simulation. External radiation sources, such as the sun, can be modeled with the heat transfer module, expanding the modeling potential for renewable energy applications. The LiveLink feature offers computer-aided design (CAD) integration with Creo Parametric design software.
Comsol
www.comsol.com

Applications Track Personnel During Emergencies

In the complex environment of industrial processing facilities, the ION Collaboration and the ION Mustering applications provide clear information about the status and safety of personnel and equipment. ION Collaboration is a realtime communication system tailored for the plant workforce. Message streams are filtered according to topic, so only members of specified groups receive certain messages. Mobile employees can use phones and electronic tablets to view and contribute to message streams. ION Mustering verifies the location of all personnel during an emergency using WiFi, GPS, or RFID tag tracking. When an alarm is activated, the locations of any missing personnel can be pinpointed and displayed on a map.
Apprion
www.apprion.com

Automation System Integrates Motor-Controlled Devices

Plant-wide operations can now be managed with a single platform, the PlantPAx process automation system. Newly upgraded PlantPAx integrates devices such as compressors, pumps, turbines, and fans. This platform mirrors the motor device memory, making data available within the control system. Users can set up applications in PlantPAx to collect and archive performance data in order to monitor electric motor current, vibration of rotating assets, and torque of variable-speed drives over time. Potential problems can be identified more easily, reducing equipment downtime. The platform utilizes an EtherNet/IP network that allows users to access diagnostic information on any device in the system from any location.
Rockwell Automation
www.rockwellautomation.com

Plant Design Module Generates Piping Layouts

Offered as a free download, CADWorx DraftPro is an AutoCAD-based 2D plant design and layout solution. The software includes hundreds of ready-to-use specifications in metric and imperial formats. Users can choose from more than 60,000 standard piping components, or quickly generate pieces as needed. Piping automatically breaks to accommodate inserted components and ease connectivity. Users may draw elevations and layouts, and produce a bill of materials for the design. DraftPro uses the same piping specifications as CADWorx Plant Professional, allowing 2D-to-3D design conversions, if necessary. DraftPro functions with all supported versions of AutoCAD.
Intergraph
www.intergraph.com

Software Performs Powder Flow Analysis

Powder Flow Pro Version 1.2, used in conjunction with the Powder Flow Tester, provides a quick analysis of powder flow behavior in industrial processing equipment. The updated software includes a comparison feature that allows the operator to

combine, display, and compare data from small and standard shear cell tests on a single graph. The results are useful for predicting how powders will behave in small bins with low consolidating stress versus large bins with high consolidating stress. A normalized flow function evaluates the effects of consolidation stress, which enables operators to prevent stable bridging or arching.
Brookfield Engineering
www.brookfieldengineering.com