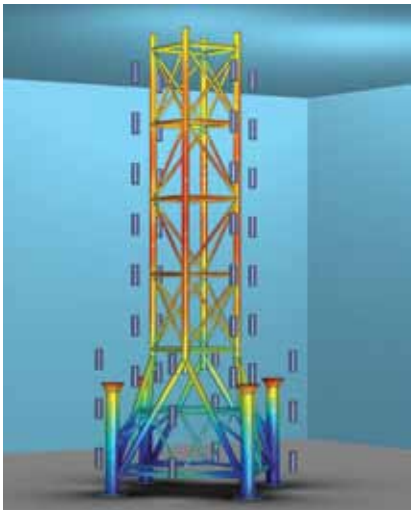
Software & Information Technology

Modeling Application Incorporates New Simulation Modules



Multiphysics Version 4.3 offers new modeling tools that extend the capabilities of the software package. The pipe flow module enables simulations of one-dimensional fluid flow, heat and mass transfer, hydraulic transfers, and acoustics. This module will be useful to engineers who design pipe networks in chemical and material manufacturing processes, and heat- and mass-transfer systems. The corrosion module allows users to model the electrochemical processes that lead to corrosion. It includes the physics required to model galvanic, pitting, and crevice corrosion. The nonlinear structural materials module uses elastoplastic, viscoplastic, creep, and hyperelastic material models to simulate objects under high stress. Version 4.3 also offers an improved function for creating boundaries and domains from imported meshes.
COMSOL
www.comsol.com

Predictive Maintenance Software Reduces Fouling Concerns

Fouled equipment in refineries has a major impact on operating costs. Deposits on heat exchanger surfaces create insulating layers, which reduces energy efficiency and increases the amount of fuel necessary to heat the crude oil. Smart Predictive Maintenance (SmartPM) is a thermo-hydraulic simulation software tool that enables oil refinery operators to predict fouling. This information can then be used to optimize heat exchanger cleaning, thereby reducing maintenance, emissions, and operating costs.
IHS
www.ihs.com

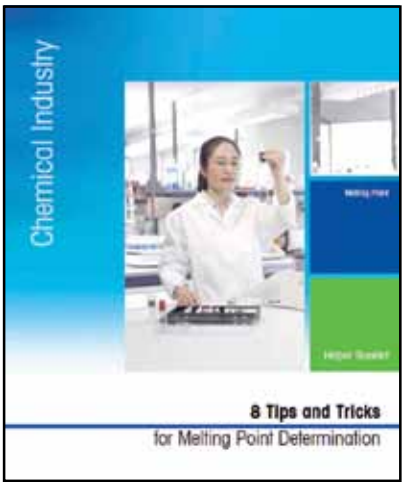
Digital Publication Provides Mature-Technology Information

The Technology Economics Program (TEC) discloses technical and economic information on mature chemical process technologies within the chemical, polymer, and refining industries. Digital publications are available online, and include process descriptions, flow diagrams, and heat and material balances, as well as raw materials and utilities consumption data for the technologies examined. Major equipment lists and materials of construction specifications are available with system cost estimates. TEC features investment scenarios for different integration methods and site locations.
Intratec Solutions, LLC
www.intratec.us

Software Creates and Analyzes Detailed Models

Unlike other modeling software that relies on block diagrams, SystemModeler uses more-complex diagrams and symbols to represent key components. The software requires no add-ons and supports the standard Modelica model language, and it integrates with the company's technology platform to enable modeling, analysis, and reporting in order to optimize system design. Engineers can create detailed, realistic models for virtually any industry or application.
Wolfram Research, Inc.
www.wolfram.com

Online Guide Simplifies Melting Point Determination



This online resource includes tips and tricks for accurate melting point determination in industrial chemical laboratories. Melting point determination is used to test the purity of substances. Although the measurement principle is straightforward, there are several methodologies that can simplify operator work and increase accuracy. The guide includes tips on heating rate, sample consistency, capillary packing, and sample size.
Mettler Toledo
www.mt.com/ChemLab