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PSE announces comprehensive gPROMS pharma modeling capability

New tools and techniques for design, scale-up and optimization of operations

Process Systems Enterprise (PSE), providers of the gPROMS advanced simulation and modeling environment, today at INTERPHEX 2007 announced a comprehensive suite of software facilities and services for high-fidelity modeling of batch, semi-batch and continuous pharmaceutical operations.

Built on the technology-leading gPROMS platform, the facilities include Advanced Model Libraries (AMLs) for crystallization, reaction and advanced separation. The state-of-the-art model libraries are underpinned by the company's ModelCare Model-Based Innovation service, which is aimed specifically at helping pharmaceutical companies to deploy modeling throughout their organizations to improve product quality, accelerate innovation and generate greater understanding of processes.

The AMLs are sets of high-fidelity predictive models for design, scale-up and operational optimization of reaction, crystallization and separation processes of all kinds, including reactive batch distillation and absorption and membrane processes. The models combine sophisticated approaches such as a population balance modeling with detailed kinetic and multicomponent diffusion models. Models can be validated against customers' own laboratory or pilot plant data to adjust parameter values to observed data in order to ensure extreme predictive accuracy at all scales of operation.

The libraries represent several years' development and successful prototyping on projects for companies such as BP Chemicals, Friesland Foods, PURAC and several pharmaceutical companies.

PSE's ModelCare is a collaborative working service aimed at delivering rapid modeling project success while transferring modeling know-how to customer organizations.

Typical applications of modeling are aimed at improving product quality and throughput, reducing batch times and batch-to-batch variability, minimizing the need to pilot-scale testing and maximizing the effective use of experimental data. The result is better quality product, resulting in higher achievable prices; higher production; better downstream processing operations; lower design risk, accelerated implementation and greater understanding of process fundamentals.

Models can also be used online to generate inferred (soft-sensed) measurements that can be used for process monitoring and control in accordance with Process Analytical Technology (PAT) guidelines. Model-based data analysis also provides confidence information that helps pinpoint any additional experimentation required or areas of design risk.

Syed Shah, PSE's Head of Sales, says "these tools and methodologies have been applied very successfully in design and operation of large-scale chemical processes around the world. We are now making them available to the designers and operators of pharmaceutical processes in a comprehensive package. Companies that adopt model-based techniques that couple first-principles models with validation against experimental data will gain significant competitive advantage in the future".

See <http://www.psenderprise.com/news/pressroom.html#pharma> for image.

About Process Systems Enterprise Ltd

PSE (www.psenderprise.com) is one of the world's foremost providers of Advanced Process Modeling software and Model-Based Innovation services to the process manufacturing industries. These apply high-accuracy mathematical models of process equipment and phenomena to provide high-quality information for decision support in process innovation, design and operation.

Use of PSE's technology and services results in faster innovation, improved designs of processes and products, enhancement of existing operations, and more effective R&D and experimental programs. Results are achieved with relatively low investment compared to alternative approaches – where these exist – with rapid return on investment and transfer of modeling know-how to industry.

PSE's global customer base of process manufacturing companies and their technology suppliers is served by offices in the UK, USA, Germany and Japan, and agencies in China, India and Korea.

About gPROMS

gPROMS® is the world's leading Advanced Process Modeling (APM) environment. It is used to provide high-quality information for decision support in innovation, design and operation across all sectors of the process industries, with particular focus on modeling of complex operations such as reaction, crystallization and polymerization.

Companies apply gPROMS to reduce time-to-market for new processes or products, improve designs, enhance production, reduce capital and operating expenditure and comply more effectively with safety, health and environmental requirements.

gPROMS is applied across the 'process lifecycle', from laboratory experimentation, through process and detailed design, to online operation, and is central to the emerging technology of Model-Based Innovation. PSE is committed to maintaining gPROMS at the leading edge of modeling technology.

For further information, please contact:

Syed Shah
Head of Sales
Process Systems Enterprise Limited
Bridge Studios
107a Hammersmith Bridge Road
London W6 9DA, United Kingdom

Tel +44 (0) 20 8563 0888
Fax +44 (0) 20 8563 0999
Email s.shah@psenterprise.com

On-line media information is available at:
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