



Process Systems Enterprise Limited

Press release

FOR IMMEDIATE RELEASE

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PSE releases gPROMS rate-based distillation Advanced Model Library **Easy high-fidelity modelling of non-equilibrium, non-standard distillation configurations**

Process Systems Enterprise (PSE), developers of the gPROMS Advanced Process Modelling environment, today released the Advanced Model Library for Gas-Liquid Contactors (AML:GLC), an “open-model” library of high-fidelity, non-equilibrium component models for gas-liquid separation.

The optional AML:GLC is one of the series of gPROMS Advanced Model Libraries that are redefining high-accuracy process modelling. It is designed to cover a wide range of separation operations, including conventional packed columns for distillation, absorption and evaporation, and more complex units such as heat-integrated devices, partition columns, partial condensers, compact heat and mass exchangers (dephlegmators) and falling-film columns.

The approach used in the AML:GLC results in unprecedented accuracy of information for decision support in optimisation of process, equipment and control design and operations. This helps to minimise design and operating risk and accelerate implementation of improved process designs.

Accuracy is achieved by using a rate-based approach that employs dual-flow hydrodynamics for estimation of heat and mass transfer, making the assumption of equilibrium only at the infinitesimally thin interface between gas and liquid films. Non-condensibles are handled rigorously in both phases.

The AML:GLC can be used to construct virtually any column geometry. Heat can be exchanged in a distributed manner along the length of adjacent sections, allowing concentric tube or tube-and-shell arrangements to be handled easily. Models also provide the flexibility to add external liquid-phase reactions of arbitrary complexity.

Zbigniew Urban, PSE Principal Consultant and architect of the AML:GLC says, “It is possible to build a high-fidelity non-equilibrium model of virtually any separation device from just five component models. This provides a flexibility and ease of use never before available to the process industries for modelling complex separation equipment”.

The approach has already been successfully applied to industrial applications that could not be modelled adequately using existing software. Applications include removal of CO₂ to ppb levels from a high-purity reactor feed stream, and the start-up and steady-state operation of various configurations of heat-integrated distillation columns (HIDiCs).

The AML:GLC caters equally for steady-state and dynamic operation, meaning that it can be used in applications from, for example, optimisation of start-up procedures or production transitions to steady-state process flowsheeting studies. As with other gPROMS Advanced Process Models, column models built and validated in the gPROMS ModelBuilder can be exported and executed within a variety of common engineering software environments such as SimSci’s PRO/II®, Honeywell’s UniSim®, and Mathworks MATLAB®, accessing either gPROMS or native physical property calculations.

The AML:GLC is available to existing licensees of gPROMS as a corporate-wide perpetual licence for a one-off advance payment plus annual maintenance. Optional physical property packages are supplied on annual lease.



Notes for Editors

About gPROMS

gPROMS® is the world's leading Advanced Process Modelling (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 modelling of complex operations such as reaction, crystallisation and polymerisation. 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.

The gPROMS ModelBuilder provides a complete model development, validation and execution platform for modellers of all levels of experience. The gPROMS Objects allow Advanced Process Models developed and validated in gPROMS ModelBuilder to execute within a wide range of engineering software, including common process flowsheeting environments, CFD software, control design environments and automation and purchasing systems.

gPROMS is applied across the 'process lifecycle', from laboratory experimentation, through process and detailed design, to online operation. PSE also provides gPROMS as a third-party APM and solution engine to channel partners in the automation, operator training and process simulation markets. PSE is committed to maintaining gPROMS at the leading edge of modelling technology through a policy of Continuous Innovation

About Process Systems Enterprise Ltd

PSE (www.psenterprise.com) is one of the world's foremost providers of advanced modelling technology and model-based services to the process manufacturing industries. The company specialises in Advanced Process Modelling software and Model-Based Innovation services, which use 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, better economic planning of complex operations and more effective R&D and experimental programmes. Results are achieved with relatively low investment compared to alternative approaches (where these exist), with rapid return on investment and transfer of modelling know-how to industry.

PSE has established itself as a leading independent high-tech provider to a growing, global customer base that encompasses the world's largest and most innovative process manufacturing and automation companies in the chemical, petrochemical, upstream oil, refining, food & beverage, consumer products, pharmaceutical and energy sectors. Customers are served by offices in the UK, the USA, Germany and Japan, and agencies in China and Korea.

The company actively develops and applies new modelling technologies, with approximately 40% of annual budget spent on R&D. The company won the prestigious UK Queen's Award for Enterprise: Innovation 2001 and for two years running was listed in the UK TechTrack 100 list of fastest growing technology companies.

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About PSE ModelCare

PSE's ModelCare® Model-Based Innovation service combines high-accuracy models with modern innovation methodologies to provide high-quality information for decision support in process and product innovation.

This helps companies to manage risk with confidence in innovation, design, and operational enhancement, based on accurate quantitative information. The result is faster innovation, improved designs of processes and products, enhancement of existing operations and more effective R&D experimental programmes.

The ModelCare approach is designed to achieve these aims with relatively low investment and fast payback, while transferring Model-Based Innovation know-how to customers to help them build their own capability.

Model-Based Innovation is applicable across all process industry sectors, and across all development areas from laboratory to operating plant.