

Press release



IMMEDIATE RELEASE

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gPROMS to include SAFT advanced thermodynamics

Tools for complex fluids open new possibilities in optimal process plant design

LONDON, 15 December 2009 --- Process Systems Enterprise (PSE), today announced an exclusive agreement with Imperial College London (ICL) to provide the SAFT-VR advanced thermodynamic technology within its world-leading gPROMS advanced process modelling software.

The Statistical Associating Fluid Theory (SAFT) approach uses physically-realistic models of molecules and their interactions to accurately predict many different thermodynamic properties of pure components and mixtures over a wide range of operating conditions.

The SAFT-VR technology was developed by Imperial College London's Molecular Systems Engineering group, partly funded by a £3.6m EPSRC grant for the development of robust and reliable thermodynamic modelling tools for industry.

Its key advantage, says George Jackson, professor of chemical physics, is the ability to predict very accurately the behaviour of complex strongly-associating systems such as azeotropic refrigerant mixtures, aqueous solutions of non-ionic surfactants and strong electrolyte solutions, as well as high molecular weight components such as polymer-gas systems. These systems are often poorly characterised by conventional techniques.

gPROMS is used by large process industry companies in the oil & gas, chemicals and petrochemicals, power generation, clean energy, food & beverage, pharmaceutical and other process sectors to accelerate innovation, manage technology risk and optimise process design and operation through the application of high-accuracy mathematical models.

PSE will release a package of SAFT-based technologies as a new product, gSAFT. Further Imperial College SAFT developments will be delivered to market within the gSAFT framework as they arise.

PSE Managing Director Costas Pantelides says "The coupling of SAFT with gPROMS's advanced optimisation technology opens up new possibilities for process design, allowing both molecular-level and process design decisions to be taken into account to ensure that the resulting design is optimal." An example is recent work on solvent-based carbon capture processes, where the optimal molecular structure for the solvent and process design parameters and operating conditions were determined simultaneously.

Prof Pantelides adds, "We are committed to delivering the best of new technology emerging from university research to process engineers throughout industry and academia within the gPROMS framework".

Contact, photos and further information

Kate Burness +44-20-8563-0888, k.burness@psenterprise.com

Photos and materials: www.psenprise.com/news/pr091209.html

About Process Systems Enterprise Ltd

PSE (www.psenderprise.com) is one of the world's foremost providers of Advanced Process Modelling (APM) software and Model-Based Engineering (MBE) services to the process manufacturing industries. APM uses high-accuracy mathematical models of process equipment and phenomena to provide high-quality numerical information for decision support in process innovation, design and operation and to capture process intellectual property [IP].

Use of PSE's technology and services within MBE programmes results in faster innovation, improved designs of processes and products, enhancement of existing 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's global customer base of process manufacturing companies and their technology suppliers is served by operations in the UK, USA, Germany, Japan and Korea, and agencies in China and India. PSE is a spin-out of Imperial College London, and its software is used in some 200 research organizations around the world.

The company's own ability to innovate was recognized with the receipt of the prestigious 2007 Royal Academy of Engineering MacRobert Award for Engineering Innovation.

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, polymerisation and fuel cell processes, where PSE supplies state-of-the-art open model libraries.

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 modelling technology.

Contact: Kate Burness, Corporate Communications Manager

Tel +44 20 8563 0888, email k.burness@psenterprise.com

On-line media information: http://www.psenderprise.com/news/press_releases/091209_saft/index.html