Press release

IMMEDIATE RELEASE
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PSE releases gPROMS Fuel Cell high-fidelity predictive modelling

Faster time-to-market and reduced technology risk for fuel cell system developers

LONDON, 15 March 2010--- Process Systems Enterprise (PSE), providers of the industry-leading gPROMS advanced process modelling suite, today launched the new gPROMS Fuel Cell product.

Aimed at companies bringing fuel cell technology – PEMFC, SOFC and others – to market, gPROMS Fuel Cell helps reduce time-to-market and optimise fuel stack and system design and operation through the application of high-fidelity predictive modelling.

Showcased at the recent FC Expo in Tokyo and already used within leading companies such as Toyota and Samsung, gPROMS Fuel Cell bundles high-fidelity models from PSE's Advanced Model Library for Fuel Cells (AML:FC) within the powerful gPROMS modelling and optimisation framework. It allows simultaneous analysis of detailed micro-scale effects and optimisation of cell design and operation within the context of the whole fuel cell system, providing a means to quantitatively manage the technology risk inherent in this complex technology.

gPROMS Fuel Cell makes it possible to address many key challenges effectively for the first time – for example to analyse and optimise aspects such current density distribution over the stack, water management (for PEMFC), deactivation and stack longevity, as well as integration of the stack with fuel processing and other systems. An optional interface can be used to link membrane-electrode assembly (MEA) models with computational fluid dynamics (CFD) models of flow channels for rapid calculation of full-stack performance.

Dynamic modelling provides facilities for control system design, analysing temperature dynamics on change in power demand, and modelling and optimising start-up and other operations. Optimisation capabilities make it possible to determine optimal platinum load and trade-offs between stack size and power output.

A key use of the high-fidelity cell and stack models is to provide a framework for interpreting experimental data and estimating key model parameters using model-based mathematical techniques

Zbigniew Urban, PSE CTO and technology leader for fuel cells, says "The complex interactions within the fuel cell itself and between stack and system – coupled with time-to-market pressures and the associated technology risk – make modelling an essential tool. There is no other way to address these issues comprehensively".

gPROMS is widely used by large process industry companies in the oil & gas, chemicals and petrochemicals, power generation, clean energy, food & beverage, FMCG, pharmaceutical and other process sectors.

Further information

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Photos and materials: www.psenterprise.com/news/pr100315.html

About Process Systems Enterprise Ltd

PSE (www.psenterprise.com) is one of the world's foremost providers of advanced process modelling (APM) software and model-based engineering (MBE) services to the process industries. APM uses high-fidelity predictive mathematical models of process equipment and phenomena to provide accurate numerical information for decision support in process innovation, design and operation.

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 India and Saudi Arabia. PSE is a spin-out of Imperial College London, and its software is used in some 200 research organisations around the world.

The company's own ability to innovate was recognised 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, separation, crystallisation, polymerisation, pressure relief and fuel cell processes, where PSE supplies state-of-the-art 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 model based engineering. PSE is committed to maintaining gPROMS at the leading edge of modelling technology.

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