



# Press release

**FOR IMMEDIATE RELEASE**

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## **PSE awards €5000 “Model-Based Innovation” prize Winning Portuguese team tackles salt brine crystallisation spray system**

LONDON, 4 November 2009 – Process Systems Enterprise (PSE), providers of the gPROMS advanced process modelling software and model-based engineering services, today announced that the winner of the prestigious PSE Model-Based Innovation Prize for 2009 is a team from the Instituto Superior Técnico of Lisbon, Portugal.

The winning team is Raquel Durana Moita, Prof. Henrique Matos, Prof. Cristina Fernandes, Prof. Clemente Pedro Nunes and Mario Jorge Pinho, for their paper “*Dynamic modelling and simulation of a heated brine spray system*”, published in *Computers and Chemical Engineering* in February 2009. The paper presents work on modelling of a heated brine spray system for salt recrystallisation ponds, which is integrated with a cogeneration system to increase the overall process efficiency. The €5000 prize will be formally awarded at the AIChE Annual Meeting in Nashville, Tennessee.

Runners up were Fabrizio Bezzo, Federico Galvanin and Massimiliano Barolo (University of Padova) for their paper “*Online Model-Based Redesign of Experiments for Parameter Estimation in Dynamic Systems*” and Mladen Eic, Qinglin Huang and Amir Malekian (University of New Brunswick) for “*Optimization of PSA process for producing enriched hydrogen from plasma reactor gas*”.

The judges summarised the winning paper as “excellent work presenting a detailed integrated dynamic model of a novel process that has been well-validated using industrial data. The model provides a good basis for optimisation of design and operation for similar industrial processes, and addresses energy efficiency issues.”

Raquel Durana Moita, speaking on behalf of the winning team, said “We are very pleased to have won the prize acknowledging the quality and innovative nature of our research and the challenging problems that we are addressing. Using advanced facilities of gPROMS such as stochastic simulation we were able to create a random drop set to simulate the spray system. gPROMS also allowed us to investigate many different alternatives rapidly, perform a detailed sensitivity analysis of key parameters, validate the model and analyse simulation results.”

PSE is a leader in the emerging field of Model-Based Innovation (MBI), in which high-fidelity mathematical models of processes and products are used to accelerate innovation and reduce technology risk. MBI helps to integrate R&D activities with engineering design, resulting in optimised process design and operation and reduced costs.

gPROMS is the world's leading modelling environment for such applications, and is widely used throughout the chemicals, energy, petrochemical, food and pharmaceuticals sectors, including some 200 academic organisations.

Mark Matzopoulos, Chief Operating Officer of PSE, says “As a company closely involved in research and innovation throughout the process industries, we are keen to recognise and foster the efforts of others who are doing the same. We congratulate the winners on the depth and quality of their work.”

### **Notes for Editors – PSE distribution version**

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Further information including photographs: [www.psenterprise.com/news/pr091104.html](http://www.psenterprise.com/news/pr091104.html)

## **About Process Systems Enterprise Ltd**

PSE ([www.psenderprise.com](http://www.psenderprise.com)) is one of the world's foremost providers of Advanced Process Modelling (APM) software and 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.

Use of PSE's technology and services within Model-Based Innovation 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 organisations around the world.

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

## **About the PSE Model-Based Innovation Prize**

The PSE Model-Based Innovation Prize is a €5000 annual prize awarded to the authors of the best paper whose results are substantially based on results obtained using PSE's gPROMS advanced process modelling environment.

The MBI prize is open to researchers from industry, academia and research organisations. The judges favour research that focuses on novel areas of process and related technology or novel approaches to traditional process areas, as well as applications that have a positive impact on society and the environment. The prize is awarded at a major chemical engineering event each year.

## **About gPROMS**

gPROMS<sup>®</sup> 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.

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