

Press release



IMMEDIATE RELEASE

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PSE awards €5000 Model-Based Innovation prizes

RWTH Aachen group wins for integrated design of ORC process and working fluid

LONDON, 26 November 2018 --- Process Systems Enterprise (PSE), the Advanced Process Modelling company, today announced the winners of the prestigious PSE Model-Based Innovation (MBI) Prize for 2018.

PSE, providers of the world-leading gPROMS modelling platform used for digital design and operations throughout the process industries, awards an annual €3000 winner's prize and two runners-up prizes of €1000 each for the most innovative use of advanced process modelling techniques in support of published research.

The winners are Johannes Schilling* and Andre Bardow of RWTH Aachen University, and Joachim Gross of Stuttgart University, Germany for their paper *Integrated design of ORC process and working fluid using process flowsheeting software and PC-SAFT*, published in Proceedings of the IV International Seminar on ORC Power Systems, ORC2017, Italy.

The judges summarised the research as “excellent work investigating the integration of Computer Aided Molecular Design (CAMD) with the gPROMS® flowsheeting environment for the integrated design of process and working fluid. Several model libraries in gPROMS ProcessBuilder® were adapted to employ the Variable Molecular Structure Compound feature of the gSAFT® advanced thermodynamic package during process optimisation. The resulting mixed-integer non-linear (MINLP) optimisation simultaneously determined the optimal molecular structure for the working fluid and the corresponding optimal process design”.

Runners up were Seo-Young Park*, Shaun C. Galbraith, Huolong Liu, Bumjoon Cha, Zhuangrong Huang and Seongkyu Yoon of the Department of Chemical Engineering, University of Massachusetts, Lowell, MA; HaeWoo Lee of Daegu-Gyeongbuk Medical Innovation Foundation, Daegu, South Korea; and Thomas O'Connor and Sau Lee of the U.S. Food and Drug Administration, for their paper *Prediction of critical quality attributes and optimization of continuous dry granulation process via flowsheet modeling and experimental validation*, and Dhia Y. Aqar* of the University of Bradford, UK and Ministry of Oil, Basra, Iraq; and Nejat Rahmanian and Iqbal M. Mujtaba of the University of Bradford, UK for their paper *Feasibility of novel integrated dividing-wall batch reactive distillation processes for the synthesis of methyl decanoate*. Full details can be found on the [PSE website](#).

The prize is judged by team of leading academics in the field of process systems engineering, Prof. Stratos Pistikopoulos (chair) of Texas A&M Energy Institute, Associate Prof. Michael Georgiadis of the Aristotle University of Thessaloniki, Greece and Prof. Eva Sorensen of University College London.

gPROMS is widely used throughout the chemicals, energy, petrochemical, food and pharmaceuticals sectors, including in some 200 academic organisations. Pieter Schmal, Head of PSE Academic, says “We work closely with academic communities around the world to foster innovation, through our academic programme, the MBI Prize, our Partnerships for Advanced Process Modelling and the PSE Academic Teaching Highway (PATH). We congratulate our winners on the quality of their work.”

For editors

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

‘Editors’: www.psenetprise.com/news/pr181126

About Process Systems Enterprise Ltd (PSE)

PSE (www.psenetprise.com) is the world’s foremost provider of Advanced Process Modelling software and services to the process industries. Companies apply advanced process models within digital design and digital operations initiatives to explore the process decision space rapidly and effectively, in order to reduce uncertainty and make better, faster and safer design and operating decisions.

PSE provides gPROMS advanced process modelling products built on the company’s gPROMS® equation-oriented platform. The two core environments for engineers and scientists are the gPROMS ProcessBuilder® flowsheeting environment for optimising fluid process design and operation and the gPROMS FormulatedProducts® environment for integrated design and optimisation of formulated products and their manufacturing processes. The company also provides a growing number of gPROMS Operational Excellence Solutions for operational monitoring, optimisation and planning.

The unique advantages that PSE tools bring are the combination of high-fidelity models, powerful mathematical optimisation and global system analysis capabilities, and an equation-oriented framework capable of rapid and robust solution of complex problems.

Use of PSE’s technology and services results in faster innovation, improved process and product designs, enhanced operations, reduced risk, more effective R&D and experimental campaigns and better capture and transfer of corporate knowledge across the organisation.

PSE’s global customer base of Fortune 500 process industry companies and some 200 universities is served by operations in the UK, USA, UAE, Japan and Korea, and agencies in China and Taiwan.