Press release

IMMEDIATE RELEASE
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PSE wins Hydrocarbon Processing Award for olefins technology

Automation & Modeling prize for ground-breaking furnace 'virtual multisensor'

LONDON, 9 June 2017 --- Process Systems Enterprise (PSE), the Advanced Process Modelling company, is the first winner of the newly-established Hydrocarbon Processing Best Automation & Modeling award. PSE won the award for its new CrackingMonitor virtual multisensor technology, which combines plant data and high-fidelity models of ethylene cracking furnaces to improve operation by producing accurate real-time measurements for key operational variables.

CrackingMonitor, a core component of the company's new gPROMS Olefins suite, addresses the challenges of obtaining critical measurements and performance information in the harsh environment of a cracking furnace. Because reliable, real-time measurement of key variables is highly problematic, it is difficult to achieve fine control of production rates, resulting in lost profit. By providing better and more timely information on quantities such as ethylene and propylene yield and tube metal temperatures, CrackingMonitor enables tighter furnace control, resulting in potentially multi-million dollar annual profit improvement with no capital expenditure

CrackingMonitor utilises PSE's unique Dynamic State Estimation technology coupled with a high-fidelity mathematical model to reconcile plant data and model predictions in order to calculate a consistent, accurate set of real-time performance metrics. It also accurately monitors coke build-up over time along the furnace coil, making it possible to optimise furnace cell operation to control coking rates.

The 2017 Hydrocarbon Processing Awards event, which honoured the downstream energy segment's innovations as voted for by the publication's readers, was held on the last night of the International Refining and Petrochemical Conference in Vienna, Austria.

Steve Hall, PSE's Director of Engineering Solutions and manager of CrackingMonitor's initial deployment on a large-scale Middle Eastern plant, says "As far as we know, this technology is the first of its kind, and has the potential to be a key component of the olefins Operational Excellence toolset in the future. It is a very practical example of applying digital technologies to improve operations".

Mark Matzopoulos, head of PSE's Chemicals, Petrochemicals & Refining business, adds "The underlying technology can be applied to any complex operation – for example, furnaces, catalytic reactors and spray dryers – as a means to determine KPIs in real time and calculate variables that cannot easily be measured. We are working with a number of companies in different sectors to implement virtual multisensor technology".

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About Process Systems Enterprise Ltd (PSE)

PSE (www.psenterprise.com) is the world's foremost provider of Advanced Process Modelling software, services and solutions to the process industries. Companies apply advanced process models 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 gPROMS® equation-oriented platform. The two core environments for engineers and scientists are the gPROMS ProcessBuilder® flowsheeting environment for fluid processes and the gPROMS FormulatedProducts® environment for integrated design and optimisation of formulated products and their manufacturing processes. The company also provides a number of gPROMS Process Operations Solutions for operational monitoring, optimisation and planning based on high-fidelity models.

PSE is committed to defining, developing and driving the adoption of next-generation process modelling software and workflows. 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. Results are achieved with relatively low investment compared to alternative approaches, with rapid returns on investment.

PSE's global customer base of Fortune 500 process industry companies is served by operations in the UK, USA, Japan and Korea, and agencies in China, Taiwan and Thailand. PSE is a spin-out of Imperial College London, and its software is used in over 200 universities around the world.

PSE's own ability to innovate was recognised with the award of the prestigious Royal Academy of Engineering MacRobert Award for Engineering Innovation, the UK's highest engineering prize.