Press release

PSE, NIZO announce Centre of Excellence for Food Product & Process Modelling

Combination of food process modelling and experimentation accelerates innovation

LONDON, 25 April 2017 --- At today's Advanced Process Modelling Forum Process Systems Enterprise (PSE), the Advanced Process Modelling company, and NIZO, the world's leading food & nutrition contract research organisation, announced the formation of the Centre of Excellence (CoE) for Food Product and Process Modelling.

The CoE will provide a single point service that combines mechanistic product and process modelling tools with industry-leading food characterisation techniques and semi-industrial scale pilot facilities, by integrating NIZO's expertise, pilot facilities and experience in food characterisation and modelling with PSE's gPROMS modelling platform and unit operation model libraries.

The integrated software and services solutions will result in better designed and operated processes with less variability, leading to better product quality, lower energy use and hence CO_2 footprint, and more flexibility when dealing with varying raw ingredients. Over and above the manufacturing benefits, the ability to combine models and experimental data to provide accurate prediction enables food & beverage organisations to explore the formulation and manufacturing decision space rapidly and effectively to accelerate design decisions.

PSE provides the gPROMS FormulatedProducts modelling suite for optimising the formulation and manufacture of formulated products, including food and pharmaceuticals, using high-fidelity process and material models of unit operations such as crystallization and spray drying combined with product performance models. PSE pioneered the Systems-based Pharmaceutics approach increasingly being adopted by major pharmaceutical companies and now being applied to food & nutrition.

NIZO, originally formed by the Dutch dairy industry but now a private and independent company, develops processes and products for food and health companies worldwide. By applying science and technology expertise in proteins, bacteria and processing at laboratory scale and in its food grade processing centre in Ede, the Netherlands, NIZO's research helps customers create competitive advantage through development of novel products and production processes.

Marc Goemans CCO at NIZO, says "we are very excited about the Centre of Excellence. It offers a unique capability and allows us to provide to our customers the most advanced set of modelling tools and services for food product and process design and upscaling, based on true understanding of the underlying food science. NIZO looks forward to working with PSE to bring this capability to the market".

Sean Bermingham, VP for PSE's Formulated Products business unit, says "the combination of mechanistic models and experimental data is a powerful approach that helps food companies to accelerate getting the right food products to market in the most cost-effective and sustainable way. We very much look forward to working with NIZO to provide a holistic service that covers all these aspects".

About Process Systems Enterprise Ltd (PSE)

PSE (www.psenterprise.com) is the world's foremost provider of Advanced Process Modelling software and services 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 family products built on its gPROMS® advanced modelling platform. These include the gPROMS FormulatedProducts modelling suite, which provides mechanistic models for active ingredient manufacture, formulation and product performance as well as specific capabilities for optimising solids and crystallization process design and operation. The company has pioneered the emerging science of Systems-based Pharmaceutics with Pfizer and other pharmaceutical companies, and is the leader of the £20.6m ADDoPT project, which involves Pfizer, AstraZeneca, GlaxoSmithKline and Bristol-Myers Squibb as well as several UK universities and SMEs in a knowledge-driven Digital Design and Control approach for drug products and their manufacturing processes.

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, Switzerland, 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 is committed to defining, developing and driving the adoption of next-generation process modelling software and workflows. The company'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.

About NIZO

NIZO – for better food and health - develops processes and products applying science and technology at lab scale and at manufacturing scale in the food grade Processing Centre. NIZO works with food and health companies worldwide, applying its expertise in proteins, bacteria and processing, with a mission to supply people with good, healthy and safe food.

NIZO develops and provides predictive models for a wide range of food processing units such as heat treatment, membrane separation, evaporation, drying and cheese manufacturing. By implementing mechanistic understanding of process-product interactions in predictive models and by integrating these models on a software platform, NIZO has pioneered in model-based up-scaling and process-product optimisation on industrial scale, resulting in reduced production cost and optimal product quality, while ensuring food safety. This will now migrate to the gPROMS platform.

NIZO also has state-of-the-art experimental facilities for food characterisation, various high throughput systems and specially designed lab-scale tools to generate the data required for model development and validation. Furthermore, by employing the predictive models in combination with the semi-industrial scale production facilities in its Processing Centre, NIZO is an ideal partner for up-scaling and can provide blueprints for future production plants.

NIZO is continuously looking for new ways of improving the efficiency of food production processes and the quality of food products, in which modelling tools play a crucial role. NIZO is therefore committed to further developing process-product modelling capabilities and making these models available for industry.