

# REGISTER NOW!

## UNIQUE OPPORTUNITY: JUNE



## SPRAY DRYING FOR PROFESSIONALS

*NIZO brings the spray drying course for professionals to the US market. For many years in a row NIZO initiates an extensive course on the theory and practicalities in spray drying for its clients in the food industry. The course grew out into a reference point of quality, giving participants understanding and inspiration improving their performance. A condensed excerpt of that course will be brought to the US now. NIZO expert dr. Kevin van Koerten in collaboration with Caloris Engineering and PSE Americas will give you the insights from theory to practice in a very interesting program. The charge is limited to \$950 ex VAT per participant, including lunch. The venue is Hilton Minneapolis/St. Paul Airport Mall of America. The event is organized on June 13th. Thanks for letting us know if you are interested to participate, secure your seat and register now!*

## SPRAY DRYING: FROM THEORY TO PRACTICE

*"LEARN THE INS & OUTS OF SPRAY DRYING AND CATCH UP ON THE LATEST DEVELOPMENTS TO OPTIMIZE YOUR PROCESS AND SAVE ON COSTS."*

### Introduction

Efficient operation of spray dryer processes is a challenging subject with many different aspects. It requires both theoretical understanding of heat and mass transfer during drying and the product physical properties. In this 1-day course, you will be taken from the basics to the practical side of spray drying, thus giving a complete view of the different elements involved with spray drying operations. This course is intended for professionals responsible for the operation, design and optimization of spray drying processes in the food industry, like a/o production supervisors and product developers. NIZO food research B.V.



NIZO was founded by the Dutch dairy industry in 1948, as the institute for dairy research and development in the Netherlands. In 1953 NIZO moved to a custom-built site with a food grade processing centre and production facility in Ede, in the heart of the Food Valley. Focussing on process and product optimization and innovation, NIZO grew to one of the leading dairy research organizations in the world. After a management buy-out in 2009 we now are a private and independent company, and have expanded our knowledge and expertise beyond dairy to many different sectors in both food and health. In 2017 NIZO setup a collaboration with PSE, who provide a sophisticated flow sheet modelling platform called gPROMS. With the combination of our build up fundamental knowledge and modelling expertise, lab facilities and food grade processing centre we aim to facilitate our customers through all stages of product and process development, scale-up and optimization.

### **THIS COURSE WILL BE LED BY:**

***Kevin van Koerten PhD, Expert Processing, at NIZO, Jim Kent, Business Development Manager at Caloris and Xiaohui Liu PhD, Applications Engineer at Process Systems Enterprise.***



Caloris Engineering, LLC was founded in Easton, Maryland in 2006 by industry innovator Artur Zimmer and a team of uniquely qualified individuals who had been actively involved in the evaporation and spray drying fields for decades. From this core group has grown a leader in evaporation and other thermal processing technologies. While Caloris Engineering is young and vibrant as a company, we have centuries of experience either directly employed or exclusively sub-contracted. Whether you have a large modern spray drying plant, or are trying to better understand the operation of your existing or legacy facility, we think you'll find Caloris' knowledge and training insightful to tune and optimize your operation. Whatever your applications, Caloris has the creativity and expertise to help push your operation and business ahead. Cutting edge efficiency and reliability that satisfies some of the most demanding clients in the world—that's the high-performance that the Caloris team brings to the table.



PSE ([www.pseenterprise.com](http://www.pseenterprise.com)) is the world's foremost provider of Advanced Process Modelling (APM) software, services and solutions to the process industries. PSE's gPROMS FormulatedProducts provides mechanistic models for active ingredient manufacture, formulation and product performance as well as specific capabilities and optimisation of products with complex quality attributes as well as their manufacturing processes, including reaction, crystallization, spray drying and other solids processes. Companies apply the modelling suite to explore the formulation and manufacturing decision space rapidly and effectively using mechanistic models to reduce uncertainty and make better, faster and safer formulations, process and product designs, and operating decisions. PSE's solutions for the Food and Dairy industries result in more efficient R&D and more effective experiments, more rapid formulation screening, reduced scale-up and tech transfer risk, better capture and transfer of knowledge across the organisation.

**PROGRAM**

**2019**

**Hilton Minneapolis/St.  
Paul Airport Mall of  
America**

## Spray drying: from theory to practice

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| 8.30  | Coffee and reception   |
| 9.00  | Opening: Introduction to the course<br>by Jim Kent, Caloris & Peter Heusinkveld, NIZO  |
| 9.15  | Spray drying Basics by Kevin van Koerten, NIZO   |
| 10.00 | Theory: Psychrometry by Kevin van Koerten, NIZO  |
| 10.45 | Coffee/tea break   |
| 11.15 | Theory: Powder properties by Kevin van Koerten, NIZO   |
| 12.00 | Lunch  |
| 13.30 | Current trends and developments in drying by Jim Kent, Caloris   |
| 14.15 | Coffee/tea break   |
| 14.30 | Spray Dryer Safety by Jim Kent, Caloris  |
| 15.15 | Case studies: Product quality, dryer capacity and fouling by Kevin van Koerten, NIZO   |
| 15.45 | Interactive modelling session: Spray dryer optimization, using gPROMS FormulatedProducts by Xiaohui Liu PhD, PSE and Kevin van Koerten, NIZO |
| 17.00 | Closing  |

**FOR MORE INFORMATION ON  
THE COURSE CONTACT:**

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**REGISTRATION FORM SURF TO:  
<https://bit.ly/2UqNHB7>**

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