

# Opening and keynote lectures at EuroDrying'2019

## Opening lecture: Ian Kemp.

### PRACTICAL APPLICATION OF DRYER MODELLING AND PROCESS UNDERSTANDING IN PHARMACEUTICAL AND RELATED INDUSTRIES

Ian Kemp is currently a Senior Scientific Investigator at GSK R&D Stevenage, with specialist input on drying processes (including vacuum, spray and fluidised bed drying), coating and micronisation. Previously 5 years with GSK's Manufacturing arm (GMS). National delegate in the WP on Drying for UK, Committee member of IChemE.

## Keynote 1: Alberto Giacomello

### DRYING IN HYDROPHOBIC NANOPOROUS MATERIALS

Alberto Giacomello graduated in Mechanical Engineering from Sapienza University of Rome and the Polytechnic Institute of New York University. He holds a PhD in Theoretical and Applied Mechanics from Sapienza and later moved as a PostDoc to the Max Planck Institute for Intelligent Systems in Stuttgart. He is currently Associate Professor in Fluid Mechanics at Sapienza University of Rome. His research focuses on the properties of fluids at interfaces and in confinement. In particular, he employs molecular dynamics simulations and macroscopic continuum models in order to investigate the fundamentals of wetting and drying in porous materials and rough (superhydrophobic) surfaces across different time and length scales. Since 2019, he has started an ERC project on the behavior of water confined in biological channels.

## Keynote 2: Cordin Arpagaus

### NANO SPRAY DRYING OF BIOACTIVE FOOD INGREDIENTS

Dr. **Cordin Arpagaus** is a process engineer and completed his doctoral studies in 2005 in the field of plasma treatment of polymer powders at the Institute of Process Engineering of the Swiss Federal Institute of Technology Zurich (ETH Zurich). He also holds a Master in Business Administration from ETH Zurich. From 2006 to 2011 he was product group leader for laboratory spray dryers and encapsulation systems at BÜCHI Labortechnik AG. His main focus was on the development of new nano spray drying technologies and the analysis of new market trends in the pharmaceutical, materials and food industries worldwide. From 2011 to 2015, he was team leader of technical support for sensors and laboratory products at Hamilton Bonaduz AG. Since April 2015, he has been Senior Research Engineer at the Institute for Energy Systems at NTB University of Applied Sciences of Technology in Buchs. His current research activities focus on thermal energy systems and energy efficiency in industrial processes, with a special interest in high temperature heat pumps.

### **Keynote 3: Angelique Leonard**

#### **X-RAY COMPUTED TOMOGRAPHY: AN OUTSTANDING VISUALIZATION TOOL FOR DRYING RESEARCH**

Prof. Angélique Léonard obtained her Chemical Engineering degree (1998) and PhD in Applied Sciences (2003) from University of Liège. She was appointed by the Belgian Fund for Scientific Research (FNRS) from 1998 to 2009. She then became Professor within the Department of Chemical Engineering at the University of Liège, in the chair “Chemical processes and sustainable development”. She was the head of this Department from 2011 to 2015. She then became the director of the Research Unit in Chemical Engineering. She obtained the "Frédéric Swarts Prize" of the Division of Sciences of the Royal Academy of Belgium, 33rd two-year period, 2002-2004 and the "Award for the Best Scientist under the age of 35 years" given by the "World Forum for Crystallization, Filtration and drying" during IDS2008 - 16<sup>th</sup> International Drying Conference, Hyderabad, India, November 9-12, 2008. She organized in 2008 the first edition of the European Conference on Sludge Management at University of Liège. She is the Belgian delegate in the International Drying Symposium advisory board. From January 2016, she is the chairwoman of the European Federation of Chemical Engineering (EFCE) Working Party on Drying.

Her research interest are: convective drying of deformable porous materials (including sludge), sludge treatment (dewatering and drying), X-ray microtomography as a tool to characterize the texture of porous materials. She also leads a Life Cycle Assessment (LCA) team with more than 10 years expertise. LCA related works includes environmental product declarations (EPDs), LCA of processes, training in various fields: chemical and energy industry, waste management, biofuels, agrofood sector, building materials, batteries. She has authored/ co-authored over 70 refereed research publications and about 120 conference proceedings. She cooperates as Referee for about 15 international scientific Journals.

### **Keynote 4: Philippe Coussot**

#### **IMBIBITION-DRYING IN MODEL SYSTEMS OBSERVED BY MAGNETIC RESONANCE IMAGING - APPLICATION TO A POULTICE/POROUS MEDIUM SYSTEM FOR DESALINATION OF HISTORICAL MASONRY**

**Philippe Coussot** is a researcher in Laboratoire Navier depending on Ecole des Ponts, IFSTTAR and CNRS, and located in Université Paris-Est (France). His researches initially concerned the rheology of debris flows (in mountain streams), and later extended to the intrinsic properties and flow characteristics of various natural or industrial yield stress fluids (pasty materials). More recently he developed another axis of research concerning flow and transfers in porous media, such as drying, imbibition, colloid transport, taking advantage of Magnetic Resonance Imaging measurements. He has published about 175 papers and several books, among others, *Mudflow Rheology and Dynamics* (Balkema, 1997), *Rheometry of pastes and suspensions* (Wiley, 2005) and *Rheophysics – Matter in all its states* (Springer, 2014). He has received several awards, among others, the Silver Medal from CNRS and the Weissenberg Award from the European Society of Rheology.