

**SIXTH NORDIC DRYING CONFERENCE**  
**June 5 to 7, 2013 – Copenhagen, Denmark**  
**FINAL PROGRAM**

**Wednesday, June 5**

- 09:45 – 13:00 **Technical tour to GEA process Engineering** (departure from First Hotel Høje Taastrup)  
 18:00 **Registration** at First Hotel Høje Taastrup, Carl Gustavs Gade 1, 2630 Taastrup  
 19:00 **Get together** at First Hotel Høje Taastrup

**Thursday, June 6**

- 8:00 **Registration** at the Conference venue (Gregersensvej 1 - Building 1, 2630 Taastrup)

<b>Conference Hall</b>	
<b>Opening Session</b>	
8:30	Opening of NDC 2013: <i>Odilio Alves-Filho</i>
8:40	Welcome to participants on behalf of Danish Technological Institute: <i>David Tveit</i>
8:50	Welcome to participants on behalf of Danish Organizing Committee: <i>Rasmus Toftegaard</i>
<b>Keynote Lectures</b>	
<b>Chair</b>	<i>Rasmus Toftegaard</i>
9:00	State of Engineering in Heat Pump Drying Technology <i>O. Alves-Filho</i>
9:30	Changes in the Microstructure of Apples (Granny Smith) during Drying and their Relationship with the Water Transport Mechanisms <i>L.A. Segura, G.M. Badillo, O. Alves-Filho</i>
10:00	The Drying Process from a Product Perspective <i>R. Renström, J. Berghel, S. Frodeson, M. Lestelius, E. Moons, L. Nilsson, L. Stawreberg, M. Ståhl</i>
10:30	<b>Coffee break</b>

	<b>Conference Hall</b>	<b>Room 12</b>	<b>Room 13</b>
<b>Sessions</b>	<b>Session A1. MODELING, SIMULATION AND SOFTWARE TOOLS</b>	<b>Session B1. HEAT PUMP AND ATMOSPHERIC FREEZE DRYING</b>	<b>Session C1. DRYING INTENSIFICATION AND USE OF MW, VACUUM AND VIBRATION</b>
<b>Chair</b>	<i>George Srzednicki</i>	<i>Odilio Alves-Filho</i>	<i>Mirko Peglow</i>
10:50	Mass Transfer Properties in Drying of Solid Wastes <i>H. Perazzini, F.B. Freire, J.T. Freire</i>	Low Temperature Fluidized Bed Drying Process in Closed Loop System <i>M. Krempsi-Smejda, M. Piatkowski, J. Stawczyk</i>	Microwave–Vacuum Drying of Strawberries with Temperature Control <i>R. Bórquez, C. Saavedra</i>
11:10	Process Optimization for Drying Konjac Glucomannan Extracted from <i>Amorphophallus</i> Spp. <i>R. Impaprasert, C. Borompichaichartkul, G. Srzednicki, J. Zhao</i>	Empirical Techniques for Increasing the Efficiency of Industrial Heat Pump Clothes Dryers in Brazil <i>M. Fortes, M.M. Herzog, A.C. Souza, W.R. Ferreira</i>	Temperature Controlled Microwave Vacuum Drying as Innovative Drying Technique: Influence of Process and Product Parameters on the Product Quality of Probiotics <i>S. Ambros, P. Foerst, U. Kulozik</i>
11:30	Statistical Criteria for Selection of Thin Layer Drying Models <i>V. Mitrevski, Lj. Trajcevski, V. Mijakovski, M. Lutovska</i>	Influence of Drying Conditions on the Moisture Diffusion during Single Stage and Two Stage Fluidized Bed Drying of Bovine Intestine for Pet Food <i>O. Alves-Filho, W. Senadeera, T. Eikevik</i>	Drying Kinetics and Bioactivity of Beetroot Slices Pre-Treated in Concentrated Apple Juice <i>K. Lech, A. Figiel, A. Wojdyło, P. Nowicka</i>
11:50	Modelling of Superheated Steam Drying Process and Evaluation of Similarities between Air Drying and Superheated Steam Drying Processes <i>M.B. Andreasen</i>	Dynamic Process Simulation of Industrial Heat Pump Drying of Cliffish <i>M. Bantle, T.M. Eikevik, I.C. Claussen, T. Andresen</i>	Vacuum-Microwave Drying of Pumpkin Slices Pre-Treated in Concentrated Chokeberry Juice <i>A. Figiel, A. Wojdyło, K. Lech, P. Nowicka</i>
12:10	Drying Shrinkage of Hydraulic Materials <i>A. Brahma</i>	Atmospheric Freeze-Impingement Drying of Microencapsulated Lactic Acid Bacteria <i>R. Bórquez, P. Bustos, J. Ferrer</i>	Analysis of Phases and Operating Alternatives during Microwave Drying Process of Micro-encapsulated Material in a Fixed-Fluidized Bed <i>J. Mardaras, J.I. Lombraña, S. Salvador</i>
12:30	<b>Lunch</b>		
<b>Conference Hall and Main Hall</b>			
13:30	<b>POSTER SESSION AND INDUSTRIAL EXHIBITION</b>		

	<b>Conference Hall</b>	<b>Room 12</b>	<b>Room 13</b>
<b>Sessions</b>	<b>Session A1. MODELING, SIMULATION AND SOFTWARE TOOLS</b>	<b>Session B2. SPRAY DRYING</b>	<b>Session C2. DRYING &amp; KINETICS OF FOODS AND POROUS MATERIALS</b>
<b>Chair</b>	<i>Trygve M. Eikevik</i>	<i>Irene Borde</i>	<i>Luis Segura</i>
14:40	Mass Transport Phenomena in Ion Beam Sputtering as an Innovative Nanotool <i>A. Julukian, O. Alves-Filho, S. Raaen</i>	Spray Drying: Multi-Scale Multiphase Modeling, Simulation and Optimization <i>M. Mezhericher, A. Levy, I. Borde</i>	Analysis of the Effects of Paste Chemical Composition during Drying in Spouted Bed <i>B.S. Nascimento, F.B. Freire, J.T. Freire</i>
15:00	An Industrial Batch Dryer Simulation Tool Based on the Concept of the Characteristic Drying Curve <i>M.R. Kærn, B. Elmegaard, P. Schneider</i>	Modelling Lysine Losses during Spray Drying of Dairy Powders <i>I. Schmitz-Schug, U. Kulozik, P. Foerst</i>	Study on Effects of Abrasive Pretreatments on Drying Kinetics of Blueberries <i>D.S. Ambadipudi, G. Srzednicki</i>
15:20	<b>Coffee break</b>		
15:40	A Moisture Transfer Model for Isothermal Drying of Cellular Materials Based on Pore Network Approach <i>B. Xiao, T. Jing, J. Chang, X. Liu</i>	Indirect Validation in CFD Modeling of Spray Drying Process <i>P. Wawrzyniak, M. Podyma, M. Jaskulski, I. Zbicinski</i>	Cassava Drying: Natural Convection Based Solar Drying <i>N. Khairnar, V. Tidke, B.N. Thorat</i>
16:00	Computational Fluid Dynamics Modeling of Airflow, Heat and Mass Transfer in Mixed-Flow Grain Dryer <i>M.A. Delele, H. Scaar, F. Weigler, E. Tsotsas, J. Mellmann</i>	Effect of Emulsion Size on Stability of Emulsified Flaxseed Oil with Transglutaminase-Treated Casein in Spray-Dried Powder <i>H. Yoshii, A. Ninomiya, S. Adachi, T. L. Neoh, R. Partanen, P. Forssell, S. Adachi</i>	Quality of Chokeberry Powders Gained by Different Drying Processes <i>A. Horszwald, J. Héritier, W. Andlauer</i>
16:20	Convective Drying of Spherical Wood Particles in a Packed Bed – Experiments and Coupled Dem-CFD Simulation <i>F. Sudbrock, H. Kruggel-Emden, S. Wirtz, V. Scherer</i>	Thermodynamic Stability of Agave Fructans, Cactus Mucilage and Aloe Juice as Additives Encapsulants <i>V.S. Farias, I.S. Mosqueda, E. Delgado, A. Solis, H. Medrano, I. Andrade</i>	Innovative Blueberry Drying Technology: Evaluation of Changes in Bioactive Compounds and Quality <i>A. Horszwald, O. Alves-Filho</i>
16:40	Computational Modelling of the Transport Phenomena Occurring during Finish Drying of Trellis-Dried Sultanas <i>H.T. Sabarez</i>	On the Modelling of Reactive Spray Drying Processes <i>W. Säckel, U. Nieken</i>	Statistical Model Discrimination for Adsorption and Desorption Isotherms of Food Powders <i>M.T. Bitti, H. Perazzini, F.B. Freire, J.T. Freire</i>

19:00 **Organ concert in Taastrup Nykirke:** Hovedgade 34, 2630 Taastrup.

## Friday, June 7

Danish Technological Institute (Gregersensvej 1 - Building 1, 2630 Taastrup)

<b>Conference Hall</b>		<b>Main Hall</b>
<b>Keynote Lecture</b>		
<b>Chair</b>	<i>Ebbe Jensen Nørgaard</i>	
9:00	<b>EnerDry ApS, Denmark</b> Large Scale Drying in Steam under Pressure <i>A.S. Jensen</i>	
<b>Session D1. INDUSTRIAL PRESENTATIONS</b>		<b>INDUSTRIAL EXHIBITION</b>
<b>Chair</b>	<i>Ebbe Jensen Nørgaard</i>	
9:30	<b>Kumera Corporation, Finland</b> Major Reduction of the Environmental Footprint in Non-Ferrous Concentrate Drying <i>J. Talja, S. Chen, H. Mansikkaviita</i>	
9:50	<b>Hosokawa Micron B.V., The Netherlands</b> Taking Flash Drying to the Next (Temperature) Level <i>G. Teekman, S. van Laar</i>	
10:10	<b>Cotes A/S, Denmark</b> Managing Air Conditions in Drying Processes <i>D. Partov</i>	
10:30	<b>Coffee break</b>	
<b>Chair</b>	<i>Odilio Alves-Filho</i>	<b>INDUSTRIAL EXHIBITION</b>
10:50	<b>GEA Niro, Denmark</b> Recent Developments in Spray Drying <i>T. Ullum</i>	
11:10	<b>Mars Petcare, Germany</b> Approach and Experience Towards Collaborative Partnership with the Academia World <i>M. Schreiber</i>	
11:30	<b>Weel &amp; Sandvig, Rotrex A/S and DTI, Denmark</b> Energy Efficient Drying with a New Turbo-Compressor Based High-Temperature Heat Pump <i>M. Weel, J. Mikkelsen, A. Kolstrup, H. Madsbøll</i>	
11:50	<b>SWISS COMBI / W. Kunz dryTec AG, Switzerland</b> EcoDry – Superheated Steam Drying Put in Practice <i>S. Staufer</i>	

<b>Main Hall</b>			
12:10	<b>INDUSTRIAL EXHIBITION</b>		
12:40	<b>Lunch</b>		
<b>Conference Hall</b>			
<b>Keynote Lecture</b>			
<b>Chair</b>	<i>Arne Sloth Jensen</i>		
13:40	Sustainable Drying Technologies for Synergistic European and Indian Market <i>B.N. Thorat</i>		
	<b>Conference Hall</b>	<b>Room 12</b>	<b>Room 13</b>
<b>Sessions</b>	<b>Session A2. ENERGY ASPECTS IN DRYING</b>	<b>Session B3. FLUIDIZED BED DRYING</b>	<b>Session C3. WOOD, CELLULOSE AND FOREST DRYING</b>
<b>Chair</b>	<i>Mauri Fortes</i>	<i>Bhaskar N. Thorat</i>	<i>Roger Renström</i>
14:15	Thermally Assisted Mechanical Dewatering Process for the Energy Efficient Dehydration of Brown Algae <i>O. Iob, J.L. Dirion, P. Arlabosse</i>	Modeling and Simulation of Drying Operations in PVC Powder Production Line: Experimental and Theoretical Study of Drying Kinetics on Particle Scale <i>A. Aubin, R. Ansart, M. Hemati, T. Lasuye, M. Branly</i>	Experimental Study on Drying of Forest Residues in a Packed Bed Dryer <i>H. Holmberg, T. Järvinen, H. Hillamo, P. Ahtila</i>
14:35	Optimization of Energy Consumption for the Drying Process with Pre-Heating of the Material <i>V. Potapov, E. Yakushenko</i>	Fluidized Bed Drying Simulation Considering Solid Shrinkage <i>C. Martínez-Vera, M. Vizcarra-Mendoza</i>	Efficiency of Techniques for Purification of Condensate from Wood Dryers <i>K. Granström, A. Hagelqvist, M. Sandberg</i>
14:55	Saving Primary Energy in Batch-Type Drying of Medicinal Plants <i>H. Jubaer, Th. Ziegler, J. Mellmann</i>	Thin Layer Drying Kinetic of Hazelnut Roasting in Fluidized Bed <i>M.S. Guney, M. Gur</i>	Analogies Between Heat and Mass Transfer for Estimation of Air Humidity <i>A. Ottosson, L. Nilsson, J. Berghel</i>
<b>Conference Hall</b>			
15:20	<b>ROUNDTABLE: Complex Approach to Identify the Industrial Product and Process Priority: Increasing the Efficiency of Interaction between Industry, Academia and Research Centers</b>		
16:20	<b>Closing of the Conference</b>		

19:00 **Conference Banquet-Dinner:** Taastrup Park Hotel, Brorsonsvej 3, 2630 Taastrup  
**Award Ceremony**