# 2010 Advanced Coating Fundamentals Program

Authors

Tentative Program. Subject to Change.

Paper # Time/Session/Title

## Monday, October 11 12:00-13:00

#### Session 1 - Opening Session and Keynote Address Session Chair: Reinhard Sangl, PTS 1.1 Natural Systems for Bio-Inspired Designs: an Dr. Peter Vukusic, Associate Professor Introduction to the Physics of Coloured Appearances in Natural Photonics and Bioinspiration in the Biological World at the University of Exeter School of Monday, October 11 13:00-14:00 **Session 2 - Poster Session** Session Chair: Reinhard Sangl, PTS 2.1 Sealant Resins Based on Ethylene Copolymers Donna Visioli and J C Chen, Dupont Co. Containing Biosourced Modifiers 2.2 Microstructure Formation on Paper Using Inkjet Kazutomo Dougome, Toshiharu Enomae and Akira Isogai, University of Tokyo Coating 2.3 Determining a Size Distribution-Defined Particle Daniel Gantenbein, Joachim Schoelkopf, Aspect Ratio for Platy and Rod-Like Coating Patrick Gane and Peter Matthews, Omya Particles 2.4 Starch Nanocrystals for Ecoefficient Barrier Coating: D. Le Corre, Julien Bras, A. Dufresne, Influence of Formulation & Process Grenoble Parameters 2.5 Control Interfacial Properties in Paper Surface Arne Krolle, BYK-Chemie GmbH 9.2 Fabrication of Particulated Model Surfaces with Petra Hansson and Agne Swerin, YKI; Controlled Roughness Using Different Deposition Lisa Skedung, Per Claesson and Mark Methods Rutland, YKI, Royal Institute of Technology; Esben Thormann, Royal Institute of Technology; Joachim Schoelkopf, Omya Development AG; Patrick Gane, Omya Devepoment AG, Aalto University

·.ə	Oplical Properties of Diffuse Coalings under i	Parually	David Haeiner, Sergey Sukriov,
	Coherent Illumination		Janghwan Bae and Aristide Dogariu,
			University of Central Florida; Deqiang
			Ma and Douglas Carter, KaMin LLC

Monday, October 11 14:00-14:30 Break at PTS Monday, October 11 14:30-15:45 Session 3 - Good Reasons for Research - Sustainable Components Session Chair: John Kettle, VTT

3.1 Nano-fibrillated Cellulose as a Coating Agent to	Hitomi Hamada, National Printing Bureau
Improve Print Quality on Synthetic Fiber Sheet	of Japan; Douglas Bousfield, University
	of Maine
3.2 Specialty Biobased Monomers and Emulsion	Steven Bloembergen, Ian J. McLennan,
Polymers Derived from Starch	and John van Leeuwen,
	ECOSYNTHETIX INC.; Do lk Lee,
	Western
	Michigan University and Scientific
	Advisor to ECOSYNTHETIX INC.
3.3 Can Starch Be Used in Toncoating?	Dr. Anthony Hiorns, IMERVS Minerals
5.5 Gan Startin De Osed in Topcoaling:	I td
Monday, October 11	
15:45 - 16:15	
Break at PTS	
Monday, October 11	
16:15 - 17:05	
Session 4 - Advanced Understanding of the Fundamentals of C	Optical Control
Session Chair: Tony Hiorns, Imerys	
4.1 Modelling of Brightness Decrease of Coated	Erik Bohlin and Caisa Johansson;
Cartonboard as an Effect of Calendaring	Karistad University; Ludovic Coppei,
Microroughness and Effective Refractive Index	
4.2 Understanding the Particle Size/Shape Ambiguity	I nomas Konigrat-Owens and Aristide
and its impact on Optical Responses of Particulate	Dogariu, University of Central Florida;
Composites	Deglang Ma and Douglas Carter, Kalvin
Evening on Own	
Tuesday, October 12	
9:00-10:15	
Session 5 - Advanced Understanding of Liquid Interactions wit	in the Coating Layer
5.1 Adjustable Wetting Properties of Paperboard by	Milana Stanian Jarkka Saarinan and
5.1 Aujustable Wetting Flopenies of Faperboard by	Martti Toivakka, Abo Akadomi University:
Liquid Fiame Spray Frocess	Hannu Teisala Mikko Tuominen Jurkka
	Kuusinalo Mikko Aromaa and Jurki
	Makel" Tampere University of
5.2 Liquid Absorption and Evaporation in a Coating	C -M Tag Forest Pilot Center Ov: M
Studied by Near Infra-red Probe Spectroscopy	Juuti VTT Technical Research Centre of
	Finland: Kimmo Kojvunen Aalto
5.3 Optical Reflectance as a Function of Liquid Contact	Kimmo Koivunen, Aalto University;

Time and Penetration Depth Distribution in Coatings Patrick Gane, Aalto University, Omya with Mono and Discretely Bimodal Pore Size Development AG

Tuesday, October 12 10:15-10:45 Break at PTS Tuesday, October 12 10:45-12:00

Session 6 - Paper with the Customer - Advanced Fundamentals for Sustainable Barrier Coatings

Distributions

Session Chair: Wolfgang Bauer, Institut für Papier-, Zellstoff- und Fasertechnik, Technische Universität Graz					
6.1 Effect of Pigment Volume Concentration and Drving	Kristin Johansson and Lars Järnström.				
Aspects on the Enzyme Activity of Clay Coatings	Karlstad University; Hanna				
	Christophliemk, Tampere University of				
	Technology; Leif Jönsson, Umeå				
	University				
6.2 Superhydrophobic Paper Coating Containing Non-	Behudin Mesic, Scion; Christian Kugge,				
conventional Clay	University				
6.3 Predictions of Barrier Properties of Filled Polymer	Tyler Seekins and Doug Bousfield				
Lavers	University of Maine: Deciang Ma and				
	Doug Carter, KaMin LLC				
Tuesday, October 12					
12:00-13:30					
Tuesday, October 12					
13:30-15:10					
Session 7 - Paper with the Customer - Advanced Fundamentals	for Printing I				
Session Chair: Patrice J. Mangin, Centre Intégré					
en Pätes et Papiers (CIPP)					
7.1 Effective Thermal Conductivity of Liquid Saturated	Philip Gerstner and S. Veikkolainen.				
Coatings and their Liquid Vaporisation Behaviour	Aalto University; Patrick Gane, Aalto				
	University, Omya Development AG				
7.2 The Role of Ink Component Diffusion During	Taina Lamminmäki, John Kettle and Pasi				
Absorption into Inkjet Coatings	Puukko, VII Technical Research Centre				
	of Finland; Cathy Ridgway, Omya				
	University Omva Development AG				
7.3 A New Method to Determine the Water Retention of	Erich Zeyringer, Sappi Gratkorn				
Coating Colours and its Impact on Mottling of Coated	I				
Papers 7.4 Influence of Please Coefing on Fluid Absorption into	Main Dukonan Bagar Ballatrom Martti				
Pigment-Coated Paper	Toivakka and ia Pedro Fardim Åbo				
rightent-obated raper	Akademi University: Kenth Johansson				
	Ytkemiska Institutet AB; Göran Ström.				
	Innventia AB				
Tuesday, October 12					
13:10 - 13:40 Rreak					
Tuesday. October 12					
15:40 - 17:20					
Session 8 - Paper with the Customer - Advanced Fundamentals	for Printing II				
Session Chair: Nick Triantafillopoulos, OMNOVA					
Solutions					
8.1 Impact of Coating Surface Properties and Print	Goran Strom and Michael Karathanasis,				
impression on the Non-uniformity of Onset Pfints	Minerals I td				

8.2	Response to Isopropanol or Ionic/Non-ionic Surfactant in the Competitive Imbibition of Water and	Cathy Ridgway and Joachim Schoelkopfa, Omya Development AG;
	Alkane into Calcium Carbonate Structures	Patrick Gane, Omya Development AG, Aalto University
8.4	Press Conditions Define Heatset Piling Tendency	Eija Kenttä, J. Kiuru, A. Peltosaari, A. Sneck, K. Koivumäki and S. Passoja, VTT Technical Research Centre of Finland
8.5	Influence of Ink Chemistry and Surface Energy on Flexographic Print Quality	Wing Luu and Douglas Bousfield, University of Maine; John Kettle, VTT, Technical Research Centre of Finland; Joseph Aspler, FPInnovations

## Advanced Coating Fundamentals Dinner

### Wednesday, October 13 9:00 - 10:15 Session 9 - Advanced Understanding of Coating Laver Structures I

<ul> <li>Session Chair: Tony Lyons, Imerys</li> <li>9.1 Distribution of Latex during Drying in Confined Geometries</li> <li>9.2 Consolidation of Coating Colors – Experimental Studies</li> <li>9.3 Dynamic Aspects of Crack Development in Coating Layers</li> </ul>	Nathanael Black, William Unertl and Douglas Bousfield, University of Maine Heikki Pajari and Hanna Koskela, VTT Technical Research Centre of Finland Peter Rättö and Joanna Hornatowska, Innventia			
Wednesday, October 13 10:15 - 10:45				
Break				
Wednesday, October 13 10:45 - 12:00				
Session 10 - Advanced Understanding of Coating Layer Structu	res II			
Session Chair: David Vidal, FPInnovations				
10.1 A Novel Approach to Quantify the Spatial Coating Layer Formation	Johannes Kritzinger and Wolfgang Bauer, Technische Universität Graz; Pekka Salminen, Styron Europe GmbH; Janet Preston, Imerys Min			
10.2 Cohesive Versus Adhesive Mechanisms of Failure in Paper Coatings - A Modelling Approach	Parvez Alam and Martti Toivakka, Åbo Akademi University			
10.3 Stochastic Scattering Approach to Determine Effective Packing Structure in Diffuse Optical Coatings	Sergey Sukhov, David Haefner and Aristide Dogariu, University of Central Florida; Deqiang Ma and Douglas Carter, KaMin LLC			
Wednesday, October 13				
12:00 - 13:30				
Wednesday, October 13				
Session 11 - Advanced Understanding of Application Systems -	The Curtain Coater			

Philippe Martinez, Martine Rueff, David Guerin and Véronique Morin, Domaine Universitaire
Yingfeng Shen, Annaleena Kokko, Hille Rautkoski and Pasi Puukko, VTT Technical Research Centre of Finland
Annaleena Kokko, John Kettle, Hille Rautkoski and Yingfeng Shen, VTT Technical Research Centre of Finland