

**2009 International Conference on Nanotechnology for the Forest Products Industry
Edmonton, Alberta, Canada - June 23-26, 2009**

Tuesday, June 23			
13:00-15:00	Nanotechnology Short Course		
17:30-19:30	Tour of National Institute for Nanotechnology & Conference Reception		
Wednesday, June 24			
08:00-08:10	Welcome <i>Annette Trimbee, Deputy Minister, Advanced Education & Technology</i> Introductions by Nils Petersen, National Institute for Nanotechnology		
08:10-08:45	Keynote Presentation: "NCC: The Revolution" <i>Jim Dangerfield, Executive VP, FPInnovations</i>		
09:00-10:30	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; vertical-align: top;"> <p>Session 1A: <u>Manufacture and Characterization of Nanostructured Cellulose</u> <i>Session Chair: Kristiina Oksman, Lulea University of Technology</i></p> </td> <td style="width: 50%; vertical-align: top;"> <p>Session 1B: <u>Framework for Managing Environmental Risks & Rewards</u> <i>Session Chair: Lori Sheremeta, National Institute for Nanotechnology</i></p> </td> </tr> </table>	<p>Session 1A: <u>Manufacture and Characterization of Nanostructured Cellulose</u> <i>Session Chair: Kristiina Oksman, Lulea University of Technology</i></p>	<p>Session 1B: <u>Framework for Managing Environmental Risks & Rewards</u> <i>Session Chair: Lori Sheremeta, National Institute for Nanotechnology</i></p>
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12:30-14:00	Luncheon Presentation : "Current Knowledge on Nanomaterial Toxicity" <i>Nigel Walker, National Institute of Environmental Health Sciences</i> Introduction by Ted Wegner, Assistant Director, USDA Forest Service, Forest Products Laboratory		
14:15-15:45	Panel 1: <u>Environmental Health and Safety</u> <i>Panel Chairs: John Festa, American Forest & Paper Association; Lori Sheremeta,</i>		

	<p><i>National Institute for Nanotechnology</i> “Nanotechnology & Forestry: Applications, Implications, Research Needs & Risk Assessment” - JoAnne Shatkin, CLF Ventures, Inc. James Votaw, WilmEr Hale Doug Green, New Chemicals Evaluation, Environment Canada Nigel Walker, National Institute of Environmental Health Sciences</p>	
16:00-17:30	<p>Panel 2: Global Challenges Panel Chair: Jim Dangerfield, Executive VP, FPInnovations</p>	<p>Session 3: Nanotechnology and Paper Session Chair: George Rosenberg, Sentinel Bioactive Paper Network</p>
	<ul style="list-style-type: none"> - Phil Jones, Imerys - Al Ward, Alberta-Pacific Forest Industries Inc. - Akira Isagai, Department of Biomaterial Sciences, Graduate School of Agricultural and Life Sciences, The University of Tokyo - Robert Pelton, Sentinel Bioactive Paper Network - Bruce Lyne, Royal Institute of Technology - Hadi Mahabadi, Xerox Research Center of Canada 	<p>“Smart Pigments with Reactive Nanocolors Printed on Paper and Flexibles” Andreas Kornherr, Mondi Uncoated Fine Paper</p> <p>“Effect of CPVA Polymer Characteristics at Saturation Level of Adsorption on Paper Strengths” Pedram Fatehi, University of New Brunswick</p> <p>“Incorporation into Paper of Cellulose Triacetate Films Containing Semiconductor Nanoparticles” Derek G. Gray, McGill University</p>
17:45-19:30	<p>Posters Session 1 Session Chairs: Yaman Boluk, Alberta Research Council Ted Szabo, Alberta Forestry Research Institute Robert Moon, USFS Forest Products Laboratory & Purdue University</p>	
19:30-21:45	<p>Video by Gary Albach, Nano Alberta Introduction by Nils Peterson, Director General, National Institute for Nanotechnology</p> <p>Dinner Presentation: “Biomass and the Development of High Value Materials and Products: An Economic Perspective for Sustainable Living” Don Roberts, CIBC World Markets Inc. Introduction by Chris Risbrudt, USFS Forest Products Laboratory</p>	
Thursday, June 25		
08:00-08:45	<p>Keynote Presentation: “Nano-Enabled Biomaterials for Sustainable Living” Carlo Montemagno, Dean, Faculty of Engineering, University of Cincinnati Introduction by Peter Hackett, President of Alberta Ingenuity Fund</p>	
09:00-10:30	<p>Session 4A: Nanocomposites II Session Chair: Siqun Wang, University of Tennessee</p>	<p>Session 4B: Novel Nanotechnology Applications I Session Chair: Orlando Rojas, North Carolina State University</p>
	<p>“Preparation of Poly Vinyl Ester/Clay Nanocomposites and Investigation of Their Properties Against the Irradiation” Seyyed Mahdi Mahjoob, University of Tehran</p> <p>“Bamboo Cellulosic Fibres” Yuqin Wan, University of British Columbia</p> <p>“Morphological Design of Highly Porous Nanocellulose Structures” Jenni Sievänen, KCL</p>	<p>Effects of Chemical Pretreatment on Enzymatic Hydrolysis of Lignocellulose Observed by AFM” Junyong Zhu, USFS Forest Products Laboratory</p> <p>“Development of an Antibacterial Paper Filter with Silver Nanoparticles” Derek G. Gray, McGill University</p> <p>“Nanocellulose Materials for the Furniture and Building Industry Made Out of Recovered Waste Paper” Martin Ernegg, Zeo International</p>
10:45-12:15	<p>Session 5A: UV Nanocoatings:</p>	<p>Session 5B: New Generation Bioproducts</p>

	<p><u>Properties, Processing and Performance</u> <i>Session Chair: World Nieh, US Forest Service</i></p>	<p><i>Session Chair: David Bressler, University of Alberta</i></p>
	<p>“Anti-UV Water-borne Nanocomposite Coatings for Exterior Wood” <i>Mirela Vlad, Laval University, Pierre Blanchet, FPInnovations, & Bernard Riedl, Laval University</i></p> <p>"UV-waterborne nanocomposite coatings with nanoalumina and nanosilica: mechanical properties and curing process studies” <i>Caroline Sow & Bernard Riedl, Laval University, Pierre Blanchet FPInnovations</i></p> <p>“UV Nanocomposite High Solids and Waterborne Coatings for the Wood Products Industry” <i>Veronic Landry & Pierre Blanchet, FPInnovations</i></p>	<p>“Bioconversion of Agricultural Byproducts to Value-Added Materials” <i>Yuko Ikeda, University of Alberta</i></p> <p>“A Stable Inkjet Ink Containing Inorganic Semiconductive Nanoparticle Pigments” <i>Peter Angelo, University of Toronto</i></p> <p>“Adsorption of Sulfur onto a Surface of Silver Nanoparticles Stabilized with Sago Starch” <i>Vladimir Djokovic, "Vinca" Institute of Nuclear Sciences</i></p>
12:30-14:00	<p>Luncheon Presentation: “ISO/TC 229 International Standards” <i>Clive Willis, President, CWIC Inc.</i> Introduction by Gary Albach, Nano Alberta</p>	
14:15-15:45	<p>Panel 3: <u>Investing in Nanotechnology for the Forest Products Industry R&D – Global Perspectives</u> <i>Panel Chair: John Cowie, AF&PA Agenda 2020</i></p>	<p>Session 6: <u>Nanoscale Characterization</u> <i>Session Chair: Chaoyang (CY) Jiang, University of South Dakota</i></p>
	<ul style="list-style-type: none"> - <i>Chris Risbrudt, Director, US Forest Service Forest Products Laboratory</i> - <i>George Weyerhaeuser, Jr., Partner, Houghton Cascade</i> - <i>Jim Dangerfield, Executive VP, FPInnovations</i> - <i>Nils Petersen, Director General, National Institute for Nanotechnology</i> 	<p>“Free-standing Multilayer Thin Film of Cellulose Nanocrystals” <i>Chaoyang (CY) Jiang, University of South Dakota</i></p> <p>“Analysis of Lignins by Surface Enhanced Raman Spectroscopy” <i>Umesh Agarwal, US Forest Service, Forest Products Laboratory</i></p> <p>“Determination of shape parameter of nanocrystalline cellulose by measuring viscosity of isotropic dispersions” <i>Yaman Boluk, Alberta Research Council</i></p>
16:00-17:30	<p>Session 7A: <u>Cellulose Nanofiber Synthesis, Functionalization and Bonding</u> <i>Session Chair: Jeff Catchmark, Penn State University</i></p>	<p>Session 7B: <u>Application of Nanotechnology for Improving Durability of Wood Products</u> <i>Session Chair: Ron Sabo, Forest Products Laboratory</i></p>
	<p>“Cellulose Nanocrystal Aerogels: Structure and Chemistry”</p>	<p>“Wood Modification Through Impregnation Process Control and a Nanotech Approach” <i>Xiaolin Cai & Pierre Blanchet, FPInnovations</i></p>

	<p><i>John Simonsen, Oregon State University</i></p> <p>“Silver Nanowire Fabrication Using Cellulose Nanocrystal Templates” <i>Robert Moon, US Forest Service, Forest Products Laboratory/Purdue University</i></p> <p>“Enhanced microbial cellulose production through fermentation Additives” <i>Jeff Catchmark, Penn State University</i></p>	<p>“Improving the Fire Performance & Durability of Value-Added Wood Products through Nano-Treatments” <i>Anisa Akhtara, FPInnovations</i></p> <p>“Color Stabilization of Waterborne Semi-Transparent and Transparent Coatings by Nanotechnologies” <i>Vincent Blanchard, Pierre Blanchet, Veronic Landry, FPInnovations</i></p>
17:45-19:30	<p>Posters Session 2 <i>Session Chairs: Yaman Boluk, Alberta Research Council Ted Szabo, Alberta Forestry Research Institute Robert Moon, USFS Forest Products Laboratory & Purdue University</i></p>	
Friday, June 26		
08:00-08:45	<p>Keynote Presentation: “Technology in Forest Products–The Changing Global Context <i>George Weyerhaeuser Jr., Partner, Houghton Cascade</i> Introduction by Rob Wellwood, Alberta Research Council</p>	
09:00-10:30	<p>Session 8A: <u>Self-Assembly</u> <i>Session Chair: Hicham Fenniri, National Institute for Nanotechnology</i></p>	<p>Session 8B: <u>Nanomechanical Characterization</u> <i>Session Chair: Robert Moon, USFS Forest Products Laboratory/Purdue University</i></p>
	<p>“Surface Chemistry and Nanotechnology-Based Products for the Forest Industry” <i>Bruce Lyne, Royal Institute of Technology</i></p> <p>“Langmuir-Schaffer Thin Films of Cellulose Nanocrystals and Their Interfacial Behaviors” <i>Orlando Rojas, North Carolina State University</i></p> <p>“Cationic Surface Functionalization of Cellulose Nanocrystals” <i>Derek G. Gray, McGill University</i></p>	<p>“Broadband Nanoindentation Creep Experiments in Wood Cell Walls and Compound Corner Middle Lamellae” <i>Joseph Jakes, University of Wisconsin-Madison & US Forest Service, Forest Products Laboratory</i></p> <p>“Characterization of Wood and Tunicate Based Cellulose Nanocrystals by AFM” <i>Robert J. Moon, US Forest Service, Forest Products Laboratory/Purdue University</i></p> <p>“NanoCrystalline Cellulose Characterization by an Atomic Force Microscope” <i>Roya Lahiji, NINT</i></p>
10:45-12:15	<p>Panel 4: <u>Emerging Markets for Nano-Enabled Biomaterials</u> <i>Session Chair: Bruce Lyne, Royal Institute of Technology</i></p>	<p>Session 9: <u>Novel Nanotechnology Applications II</u> <i>Session Chair: Richard Berry, FPInnovation</i></p>
	<ul style="list-style-type: none"> - <i>John Cowie, AF&PA Agenda 2020</i> - <i>Mark A. Harmer, DuPont - “Biobased Materials and Biofuels”</i> - <i>Hamdy Khalil, Woodbridge Corporation</i> - <i>Bruce Lyne, Royal Institute of Technology</i> - <i>Philip Evans, UBC</i> 	<p>“Nanoparticles with Immobilized Biosensors for Bioactive Papers” <i>Robert Pelton, SENTINEL Bioactive Paper Network, McMaster University</i></p> <p>“Re-Engineering Paper using Nanocellulose and Multiscale Modeling” <i>Erkki K.O. Hellén, KCL Science & Consulting</i></p>

		<p>“Literature review of graphitic acid, graphitic anhydride, graphite oxide and graphene and combinations with cellulose” <i>Steven L. Masia, Sappi Fine Paper, NA</i></p>	
12:30-14:00	<p>Luncheon Presentation: "Nanooptics: Illuminating nanostructures" <i>Martin Moskovits, University of California–Santa Barbara</i> Introduction by Steve Price, Alberta Forest Products Research Institute</p>		
14:15-15:45	<p>Interest Group Working Session I <u>Self Assembly</u> - Hicham Fenniri, <i>National Institute for Nanotechnology</i> - Carlo Montemagno, <i>Faculty of Engineering University of Cincinnati</i></p>	<p>Interest Group Working Session II <u>Nanophotonics</u> Martin Moskovits, <i>University of California, Santa Barbara</i> - Paul Burrows, <i>Reata Research, LLC</i></p>	<p>Interest Group Working Session III <u>Forest Industry Opportunities in the Nano World</u> <i>Pat Guidera</i></p>
16:00-17:00	<p>Post-conference Meeting & Wrap-up, Discussion of 2010 Conference The Steering Committee and anyone interested is invited to attend</p>		