

## TECHNICAL PROGRAM

Subject to change – please check the conference website for updates.

Monday – 5 June 2017	
<b>8:30-11:30</b>	<b>Tour of FPInnovations</b>
<b>12:30-2:00</b>	<b>Student Committee Lunch</b> (open to all students; pre- registration required) <i>Room: Creation</i>
<b>1:00-4:00</b>	<b>EHS Workshop</b> 1:00-4:00 <i>Room: Symphonie I</i>
	<b>ISO TC6 TG1 Meeting</b> 2:00-4:00 <i>Room: Symphonie II</i>
<b>4:00-5:30</b>	<p>Session 1: <b>OPENING SESSION AND KEYNOTE</b>            Session Chair: Jean Bouchard            Keynote Speaker: Sébastien Corbeil, CelluForce            “Life in a Start-up: CelluForce Experience”            Welcome &amp; Nano Division Overview  <i>Room: Grand Salon Opera ABC</i></p>
<b>5:30-7:00</b>	<b>Welcome Reception</b> <i>Room: Grand Salon Opera Foyer</i>
<b>6:30-7:30</b>	<b>Young Professionals Mixer</b> <i>Room: Terrace des Festivals</i>

Tuesday – 6 June 2017			
<b>8:30-10:00</b>	<b>Session 2: Industrial Application Testing</b> Session Chair: <i>Alan Rudie, USDA Forest Products Laboratory</i> <i>Room: Grand Salon Opera A</i>	<b>Session 3: Self or Directed Assembly of Cellulose Nanocrystals</b> Session Chair: <i>Agne Swerin, RISE Research Institutes of Sweden and KTH Royal Institute of Technology</i> <i>Room: Grand Salon Opera B</i>	<b>Session 4: Emulsions</b> Session Chair: <i>Carole Fraschini, FPInnovations</i> <i>Room: Grand Salon Opera C</i>
8:32	Application of Cellulose Nanocrystals in Oilfield Gravel Packing Fluid - <i>Valerie Lafitte, Schlumberger</i>	Drying Processes during Cellulose Nanocrystal Film Formation – <i>Derek Gray, McGill University</i>	Polymer Graft-Modified CO <sub>2</sub> Switchable Cellulose Nanocrystals Prepared by Living Radical Polymerization and Their Use as Pickering Emulsifiers - <i>Joe Glasing, Queen’s University</i>



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8:54	Filtration and Rheological Properties of Wyoming Clay-Water Based Drilling Fluids with Cellulose Nanocrystals (CNC) – <i>Yaman Boluk, University of Alberta</i>	Controlling the Deposition Pattern of Cellulose Nanocrystals in Drying Droplets Using Internal Flow Fields - <i>Wim Thielemans, KU Leuven</i>	Investigation of the Formation Mechanisms in High-Internal Phase Pickering Emulsions Stabilized by Cellulose Nanocrystals - <i>Wadood Y. Hamad, FPIinnovations</i>
9:16	Cellulose Nanofibres for Sulphate Resistance in Cement Based Systems - <i>Vivek Bindiganavile, University of Alberta</i>	Formation of the Liquid Crystalline Phase in Sulfuric Acid Derived Cellulose Nanocrystal Suspensions - <i>Christina Schütz, KU Leuven</i>	Emulsions Stabilized by Cellulose Nanofibrils: Effect of Surfactant and Electrolyte in Phase Transitions - <i>Mariko Ago, Aalto University</i>
9:38	Microfibrillated Cellulose Outside of the Box - <i>Per Svending, FiberLean Technologies Ltd</i>	Cellulose Nanocrystal Surface Charge Influences Self-Assembly and Rheology - <i>Tiffany Abitbol, The Hebrew University of Jerusalem</i>	Tailoring Cellulose Nanocrystal Surface Chemistry for Emulsion Polymerization Systems - <i>Stephanie Kedzior, McMaster University</i>
<b>10:00-10:30</b>	<b>Break</b> <b>Room: Grand Salon Opera Foyer</b>		
<b>10:30-12:00</b>	<b>Session 5: Sustainability in Applications</b> <b>Session Chair Benzhad Ahvazi, Innotech Alberta</b> <b>Room: GSO A</b>	<b>Session 6: Colloidal Interactions in Cellulose Nanomaterials</b> <b>Session Chair: Tiffany Abitbol, The Hebrew University of Jerusalem</b> <b>Room: GSO B</b>	<b>Session 7: Foams and Aerogels</b> <b>Session Chair: Orlando Rojas, Aalto University</b> <b>Room GSO C</b>
10:32	Can Polyurethanes Benefit from the Incorporation of Cellulose Nanocrystals? A Review of The Current Literature - <i>Sassan Hojabr, CelluForce</i>	Acid Dissociation of Surface Bound Water on Cellulose Nanofibrils: Calcium Carbonate Nanoparticle Probe Under the Application of Ultralow Shear- <i>Patrick Gane, Aalto University/Omya International AG</i>	Novel Biobased Micro- and Nanomaterials in Porous Foam Formed Structures - <i>Katariina Torvinen, VTT Technical Research Centre of Finland Ltd.</i>
10:54	Antimicrobial Activity of Liquid Flame Spray (LFS) Deposited Nanoparticles on Natural Fibre Based Substrates - <i>Jarkko J Saarinen, Åbo Akademi University</i>	Comparing Approaches to Increasing Adhesion Between Wet Cellulose Surfaces - <i>Robert Pelton, McMaster University</i>	Ligno-nanocelluloses for the Development of Foams and Aerogels– <i>Orlando Rojas, Aalto University</i>
11:16	Ultrastrong Flexible and Conducting Laminated Bionanocomposites from Cellulose Nanocrystals- <i>Vladimir Tsukruk, Georgia Institute of Technology</i>	Colloidal Chemical Properties of Cellulose NanoFibrils (CNFs)- Accepted Knowledge, New Boundary Conditions and Challenges - <i>Lars Wågberg, Fibre Technology, KTH Royal Institute of Technology</i>	Cellulose Nanocrystals with Methylcellulose as a Co-Stabilizer for Pickering Emulsions, Gels, Oil Powders and Aqueous Foams - <i>Emily Cranston, McMaster University</i>



11:38		Investigation of Iridescent Behavior of Chiral Nematic Cellulose Nanocrystal Film in Response to Controlled Humidity and Temperature - <i>Nattinee Bumbudsanpharoke, Yonsei University</i>	Cellulose Aerogels with Tunable Hydrophilicity-Hydrophobicity via Facile Self-Assembling, Gelation and Crosslinking - <i>You-Lo Hsieh, University of California, Davis</i>
12:00 - 2:00	<p align="center"><b>Session 8: Keynote Presentation and Lunch</b>  <b>Session Chair: Tom Lindstrom, RISE Bioeconomy</b>  <b>Keynote Speaker: Trevor Stuthridge, FPInnovations</b>  <b>An Innovation Toolbox to Develop, De-Risk and Deploy World-Leading Nanocellulose Opportunities</b>  <b>Room: Soprano AB</b></p>		
2:00-3:30	<p><b>Session 9: New &amp; Emerging Infrastructure Applications</b>  <b>Session Chair: Robert Moon, USDA Forest Service</b>  <b>Room: GSO A</b></p>	<p><b>Session 10: Fundamentals of Cellulose Nanomaterial-Water Interactions</b>  <b>Session Chair: Jean Bouchard, FPInnovations</b>  <b>Room: GSO B</b></p>	<p><b>Session 11: Mechanisms and Fundamentals</b>  <b>Session Chair: Wadood Y. Hamad, FPInnovations</b>  <b>Room: GSO C</b></p>
2:02	Cellulose Nanocrystals for the Flocculants of Chlorella Microalgae - <i>Wim Thielemans, KU Leuven</i>	Development of CF Dispersion Methods – Lab Scale - <i>Xujun Hua, FPInnovations</i>	Passivation and Control of Protein Affinity of Bioactive Nanocellulose - <i>Orlando Rojas, Aalto University</i>
2:24	Fire Retardant Nanocellulose-Based Coatings - <i>Mikko Tuominen, Research Institutes of Sweden, RISE Bioscience and Materials/Chemistry Materials and Surfaces</i>	Investigation of the Effect of Spray-Drying Processing Parameters and Surface Chemistry on CNC Redispersibility - <i>Carole Fraschini, FPInnovations</i>	Probing Interactions in Nanocellulose Mixtures Using Oscillatory Shear Rheology - <i>Agne Swerin, RISE Research Institutes of Sweden and KTH Royal Institute of Technology</i>
2:46	Cellulose-Clay Synergy Effects in Multifunctional Hybrid Composites - <i>Lars Berglund, KTH Royal Institute of Technology</i>	Understanding Cellulose Nanocrystal Interactions and Dispersibility as a Function of Surface Chemistry - <i>Michael Reid, McMaster University</i>	Designer Molecules for One-step Modification of Cellulosic Materials through the Triazine Chemistry - <i>Jose Moran-Mirabal, McMaster University</i>
3:08	CF/Gypsum Paper Sheets: A Tech. Platform to Manufacture Lightweight, Flame Retardant and Strong Gypsum Panels - <i>Yuxia Ben, FPInnovations</i>	Dielectric Properties and Moisture Uptake in Cellulose Nanocrystals Films – Characterization of Water Confinement - <i>Jan Obrzut, National Institute of Standards and Technology</i>	Tuning Surface Modification of Cellulose Nanocrystals to Maximize Catalytic Activity - <i>Nathan Ellebracht, Georgia Institute of Technology</i>
3:30-4:00	<p align="center"><b>Break</b>  <b>Room: Grand Salon Opera Foyer</b></p>		
4:00-5:30	<p><b>Session 12: End Users Panel Discussion</b>  <b>Moderator: Hamdy Khalil, Woodbridge Foam Corporation</b>  <b>Room: GSO A</b></p>	<p><b>Session 13: Cellulose Nanomaterial Self-Standing Films</b>  <b>Session Chair: Julien Bras, Grenoble INP Pagora - LGP2</b>  <b>Room: GSO B</b></p>	<p><b>Session 14: Functional Materials</b>  <b>Session Chair: Yaman Boluk, University of Alberta</b>  <b>Room: GSO C</b></p>



4:02	<p>Panelists Include:</p> <ul style="list-style-type: none"> <li>• <i>Dr. Kent Nielsen, 3M Canada</i></li> <li>• <i>Dr. Toivo Kodas, Cabot Corporation</i></li> <li>• <i>Dr. Deborah Mielewski, Ford Motor Company</i></li> <li>• <i>Dr. Laurent Vidal, L'Oreal</i></li> <li>• <i>Dr. Valerie Lafitte, Schlumberger</i></li> </ul>	<p>Spray Coating – A Rapid Method for Preparation of Free-Standing Nanocellulose Film - <i>Swambabu Varanasi, Monash University</i></p>	<p>Cellulose Inks for 3D Printing and Their Rheology - <i>Michael Hausmann, Empa, Swiss Federal Laboratories for Materials Science and Technology, Applied Wood Materials Laboratory/ETH Zürich</i></p>
4:22		<p>Use of Chromatogeny for the Development of Hydrophobic MFC Films - <i>David Guérin, Centre Technique du Papier</i></p>	<p>Structure-Process-Property Relationships in Extrusion Based Additive Manufacturing of CNC Composites- <i>Michael Bortner, Virginia Tech</i></p>
4:46		<p>Nanocellulose Based Self-Standing Films for Water Purification and Softening - <i>Vanja Kokol, University of Maribor</i></p>	<p>In-situ Polymerized Cellulose Nanocrystals (CNC) – Poly(L-lactide)(PLLA) Nanomaterials and Applications- <i>Chuanwei Miao, FPInnovations</i></p>
5:08		<p>Improvement of the Physical and Mechanical Properties of Lignocellulose Nanofibrils (LCNF) Films Through Hybridization - <i>Mehdi Tajvidi, Rose-Hulman Institute of Technology</i></p>	<p>Performance Comparison Study of Different Cellulose Nanofiber Suspensions to Stabilize Pigment - <i>Seema Saini, University Grenoble Alpes - LGP2/Grenoble INP</i></p>
5:30-7:30	<p><b>Session 15: Poster Session and Student Poster Competition</b> <b>Room: Grand Salon Opera Foyer</b></p>		
<p><b>Wednesday – 7 June 2017</b></p>			
7:30 -8:20	<p>Research Committee Meeting (Members Only) <i>Room: Imagination</i></p>		
8:30-10:00	<p><b>Session 16: Cellulose Nanomaterials for the Pulp and Paper Industry</b> <b>Session Chair: Warren Batchelor, BioProcessing Research Institute of Australia, Department of Chemical Engineering, Monash University</b> <b>Room: GSO A</b></p>	<p><b>Session 17: Photonics and Catalysts</b> <b>Session Chair: Joel Kelly, BC Research Inc.</b> <b>Room: GSO B</b></p>	<p><b>Session 18: Production of Cellulose Nanomaterials</b> <b>Session Chair: Derek Gray, McGill University</b> <b>Room: GSO C</b></p>
8:32	<p>An Example of the Creation and Use of MFC (Micro-Fibrillated Cellulose) in Today's Specialty Papers Market - <i>David Cowles, GL&amp;V USA Inc.</i></p>	<p>Diameter varying electro-spun CNC composite Nanofiber Study- <i>Ling-Chih Chen, National Tsinghua University</i></p>	<p>Nanocellulose Derivatives – A Comparative Study Between Wood- and Vegetable-Based Raw Materials - <i>Antti Laukkanen, Betulium</i></p>



8:54	Forming a Cellulose Based Nanopaper Using XPM- <i>Zoheb Karim, MoRe Research Örnköldsvik AB</i>	Lignocellulosic micro- and nanomaterials as Copper Frames for the Evaluation of the Copper (I) Catalyzed Azide-Alkyne Cycloaddition (CuAAC)- <i>Gloria Oporto, West Virginia University</i>	Production of Lignin Containing Cellulose Nanomaterials from Wood Chips - A Scale-Up Study- <i>J.Y. Zhu, USDA Forest Service, Forest Products Laboratory</i>
9:16	Scale Up of Nanocellulose/ Hybrid Inorganic Films Using a Pilot Web Former - <i>Daniele Oliveira de Castro, MoRe Research</i>	Cellulose Nanocrystals as Non-innocent Catalysts Supports and Chiral Inducers- <i>Audrey Moores, McGill University</i>	Production of Cellulose Nanocrystals from Pre-Hydrolyzed Substrates- <i>Eero Kontturi, Aalto University</i>
9:38	Strengthening and Drying of Board Structures Containing Nanocellulose Materials - <i>Jani Lehmon, VTT Technical Research Centre of Finland Ltd.</i>	Cellulose nanocrystal templating of semiconducting polymers for optoelectronic and photonic devices- <i>Bailey Risteen, Georgia Institute of Technology</i>	Pineapple (curaua) and Eucalyptus Nanofibers Films by Casting Continuous- <i>Pedro Ivo Cunha Claro, University of São Carlos and Embrapa Instrumentation</i>
<b>10:00-10:30</b>	<b>Break</b> <b>Room: Grand Salon Opera Foyer</b>		
<b>10:30-12:00</b>	<b>Session 19: Functionality via Surface Modification of Cellulose Nanomaterials</b> <b>Session Chair:</b> <i>Christina Schütz, KU Leuven</i> <b>Room: GSO A</b>	<b>Session 20: Printed Electronics and Storage Devices</b> <b>Session Chair:</b> <i>Wadood Y. Hamad, FPInnovations</i> <b>Room: GSO B</b>	<b>Session 21: New Products and Processes</b> <b>Session Chair:</b> <i>Carole Fraschini, FPInnovations</i> <b>Room: GSO C</b>
10:32	Nanocelluloses Towards New Functions - <i>Olli Ikkala, Aalto University</i>	Cellulose Nanofibrils: A Multifunctional 1D Building Block for Flexible Paper Batteries - <i>Sang-Young Lee, Ulsan National Institute of Science and Technology</i>	Nanocellulose Morphologies Control Through Drying Process - <i>TriDung (TD) Ngo, InnoTechAlberta</i>
10:54	Composite Cholesteric Nanocellulose Films with Enhanced Mechanical Properties - <i>Brandon Vollick, University of Toronto</i>	Sustainable Cellulose-Containing Inks for Printed Electronics on Paper Substrates - <i>Luis Pereira, CENIMAT/I3N, Universidade NOVA de Lisboa and CEMOP/UNINOVA</i>	Strategic Development for Pilot Plant Optimization of Cellulose Nanocrystals (CNC) Production - <i>Christophe Danumah, InnoTechAlberta</i>
11:16	Will Silicones Increase the Value of Lignin and Cellulose? - <i>Michael A. Brook, McMaster University</i>	Functionalized Nanocellulose-Integrated Heterolayered Nanomat Separators: From Renewable Resources to Sustainable Energy Storages - <i>Jung-Hwan Kim, Ulsan National Institute of Science and Technology</i>	An Overview of CNC Manufacturing Cost, Guidelines for Research Opportunities Based on Cost and Financial Risks Analysis – <i>Camilla Abbati de Assis, North Carolina State University</i>



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11:38	Superhydrophobic and Slippery Lubricant-Infused CNF Nanocellulose Films by Photoinduced Thiol-Ene Coupling - <i>Jiaqi Guo, Aalto University</i>	Prospects for Cellulose Nanocrystals in Photonics and Electronics – <i>Wadood Y. Hamad</i>	Feasible Application of Hydrophobicity in Amphiphilic ACC-Nanocellulose Created by Aqueous Counter Collision(ACC)- <i>Tetsuo Kondo, Kyushu University</i>
12:00 - 2:00	<b>Session 22 - Lunch with Presentation</b> <b>Session Chair: Emily Cranston, McMaster University</b> <b>By Richard Berry, CelluForce</b> <b>CelluForce NCC™: Making Its Way Into Commercial Products</b> <b>Room: Soprano AB</b>		
2:00-3:30	<b>Session 23: Cellulose Nanomaterial Based-Coatings</b> <b>Session Chair: Anne Dorris, FPIInnovations</b> <b>Room: GSO A</b>	<b>Session 24: Tissue Engineering and Implants</b> <b>Session Chair: Michael Hausmann, Empa, Swiss Federal Laboratories for Materials Science and Technology, Applied Wood Materials Laboratory/ ETH Zürich</b> <b>Room: GSO B</b>	<b>Session 25: Sols and Gels</b> <b>Session Chair: Michael Bortner, Virginia Tech</b> <b>Room: GSO C</b>
2:02	Improved Performance of Water-Based Inks on Plastic Films with Thin CNC Coating - <i>Joseph Aspler, FPIInnovations</i>	CNF Hydrogels for Tissue Engineering: Interactions Between Fibroblasts and CNF with Two Different Surface Chemistries - <i>Kristin Syverud, Paper and Fibre Research Institute</i>	Injectable Fluorescent Hydrogel Formed by Cellulose Nanocrystals and Graphene Quantum Dots - <i>Amir Khabibullin, University of Toronto</i>
2:24	Strength and Barrier Enhancement of Paperboards Properties with Cellulose Nanofibrils Applied by Blade Coater - <i>Doug Bousfield, University of Maine</i>	Injectable Cellulose Nanocrystal Hydrogels as a Platform for Functional Tissue Engineering Applications - <i>Kevin De France, McMaster University</i>	Unique Aspects of TEMPO-Oxidized Cellulose Nanofibril/Mixed-Linkage - Glucan Nionanocomposite Gels - <i>Suvi Arola, University of British Columbia</i>
2:46	Substrate Requirements for Roll-to-Roll Processed Nanocellulose Coatings - <i>Vinay Kumar, Åbo Akademi University</i>	Cross-Linked Cellulose Nanocrystal Aerogels for Bone Scaffolding Applications - <i>Daniel A. Osorio, McMaster University</i>	Investigating Cellulose Nanocrystals (CNC) as Oil Well Cement Additive and Its Mechanisms of Action - <i>Yaman Boluk, University of Alberta</i>
3:08	Characteristics of CNF and PVA Suspension Depending on Mixing Ratio - <i>Hye Jung Youn, Seoul National University,</i>	Implantable Nanocomposite Materials - <i>E. Johan Foster, Adolphe Merkle, Institute/Virginia Tech Center for Sustainable Nanotechnology (VTSuN) Virginia Tech</i>	Surfactant Modified Cellulose Nanofibrils for Enhanced Oil Recovery - <i>Trygve D. Jakobsen, Norwegian University of Science and Technology</i>
3:30-4:00	<b>Break</b> <b>Room: Grand Salon Opera Foyer</b>		



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4:00-5:30	<b>Session 26: Packaging</b> Session Chair: David Skuse, <i>FiberLean Technologies Ltd.</i> Room: GSO A	<b>Session 27: Wound Dressings and Drug Delivery</b> Session Chair: Kristin Syverud, <i>Paper and Fibre Research Institute, NTNU</i> Room: GSO B	<b>Session 28: Filaments and Threads</b> Session Chair: Yaman Boluk, <i>University of Alberta</i> Room: GSO C
4:02	Cellulose Nanomaterials - Multilayer Films as Oxygen Barrier - <i>Jinwu Wang, Forest Products Laboratory</i>		Spinning a Yarn: Cellulose Fibres Spun from Solution - <i>Stephen Eichhorn, University of Exeter</i>
4:24	Novel In-Situ Precipitation Concept to Prepare Green Barrier Materials - <i>Swambabu Varanasi, Monash University</i>	Cellulose-Based Biosensors for Enzyme Detection - <i>Harry Brumer, University of British Columbia</i>	Filaments of Cellulose Nanofibrils via Hydrogel Spinning - <i>Meri Lundahl, Aalto University</i>
4:46	Engineering Photocatalytic Nanocellulose - TiO <sub>2</sub> paper: Effect of Structure and Nanoparticle Aggregation State - <i>Warren Batchelor, BioProcessing Research Institute of Australia, Department of Chemical Engineering, Monash University</i>	Cellulose Nanofibrils Chemical Surface Modification for Monitoring Drug Release in Tissue Engineering - <i>Julien Bras, University Grenoble Alpes - LGP2/Grenoble INP</i>	CF in Textile Applications - <i>Annie Dorris, FPIInnovations</i>
5:08	Measuring the Oil and Grease Barrier Properties of Microfibrillated Cellulose Coated Paper Using Ultrasonic Signal Variation - <i>Jörg Padberg, Munich University of Applied Sciences</i>		Anisotropy Determination During Assembly of Nanocellulose Fibrils into a Gel Thread - <i>Karl Håkansson, RISE Bioeconomy</i>
6:00-11:15	<b>Conference Dinner 6:00-11:15 Meet in Hotel Lobby at 6:00pm for bus transportation</b>		
<b>Thursday – 8 June 2017</b>			
8:30-10:00	<b>Session 29: New Metrology Methods for Cellulose Nanomaterials</b> Session Chair: Jeremiah Woodcock, <i>National Institute of Standards and Technology</i> Room: GSO A	<b>Session 30: Updates from Producers</b> Session Chair: <i>Benzhad Ahvazi, Innotech Alberta</i> Room: GSO B	<b>Session 31: Infrastructure Performance BioFilaments</b> Session Chair: Keith Gourlay, <i>Performance BioFilaments</i> Room: GSO C



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8:32	Fluorescence Lifetime Imaging of CNC-Epoxy Composites - <i>Sindhu Seethamraju, National Institute of Standards and Technology</i>	Progress Towards Nanocellulose Commercialization - <i>Vesa Pylkkanen, American Process</i>	Lignocellulose Nanofibrils (LCNF) a Viable Low-Cost Alternative to Cellulose Nanofibrils in Binder Applications: Effect on Physico-Mechanical Properties of Resin-Free Medium Density Fiberboards (MDF)- <i>Mehdi Tajvidi, University of Maine</i>
8:54	Xyloglucan Adsorption as a Method to Measure Surface Area for Never Dried Cellulose Nanofibers - <i>Carl Moser, Royal Institute of Technology KTH &amp; Valmet AB</i>	New Transition Metal Catalyzed Oxidative CNC Production Method - <i>Sean McAlpine, Blue Goose Biorefineries Inc.</i>	Cellulose Filaments Reinforcement of Wood Fibre Insulation Boards - <i>Yaolin Zhang, FPIInnovations</i>
9:16	Dye-Labeled CNCs for Monitoring CNC Distribution - <i>Linda Johnston, National Research Council Canada (NRC)</i>	Mineral/ Microfibrillated Cellulose Composite Materials: Next Generation Products, New Applications and Product Forms - <i>David Skuse, Fiberlean Technologies Ltd.</i>	High Performance Cement via Cellulose Nanocrystal Addition - <i>Jeffrey P. Youngblood, Purdue University</i>
9:38	Interactions and Layer Properties of Nanocellulose Using Multiparametric Surface Plasmon Resonance Spectroscopy - <i>Annika Jokinen, BioNavis Ltd.</i>	Melodea Cellulose Nano Crystals (CNC) Production and Product Development - <i>Yuval Nevo, Melodea</i>	Cementitious Material Reinforced with Thermomechanical Pulp (TMP) and Nanofibrillated Cellulose (NFC) - <i>Tomo Kakitani, Sumitomo Forestry Ltd.</i>
<b>10:00-10:30</b>	<b>Break</b> <b>Room: Grand Salon Opera Foyer</b>		
<b>10:30-12:00</b>	<b>Session 32: Intrinsic Properties Measurement (CNCs)</b> <b>Session Chair: Stephanie Beck, FPIInnovations</b> <b>Room: GSO A</b>	<b>Session 33: Workplace Safety: From Research to Practice</b> <b>Session Chair: Heli Kangas, VTT Technical Research Centre of Finland Ltd.</b> <b>Room: GSO B</b>	<b>Session 34: Composites – Solvent Based Processing</b> <b>Session Chair: Douglas Fox, American Univeristy</b> <b>Room: GSO C</b>
10:32	Crystallinity of Cellulose Nanocrystals by Raman, NMR, and XRD Methods - <i>Umesh Agarwal, USDA Forest Service, Forest Products Laboratory</i>	Occupational Health and Safety Characterization of Several North American Cellulose Nanocrystals - <i>Steven Ellis, FPIInnovations</i>	Processing of CNC composites: Increasing Toughness, <i>E. Johan Foster, Virginia Tech</i>
10:54	Analyzing Process Parameter Interaction on Acid Hydrolysis Production of Cellulose Nanocrystals - <i>Michael Bortner, Virginia Tech</i>	Global Activities of Cellulose Nanomaterial Environmental Health and Safety - Opportunities for Collaboration - <i>Kimberly Ong, Vireo Advisors LLC</i>	Cellulose Nanocrystal/Polymer Nanocomposites for Adhesive Applications - <i>Alexandra Ouzas, University of Ottawa</i>
11:16	Self-Assembled Cellulose Nanocrystal Blends for Tough	Advances in the Occupational Health and Safety Practices of	Alternatives to Drying and to Low-Solids Processing of





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	Bioinspired Composites - <i>Bharath Natarajan, National Institute of Standards and Technology</i>	Nanomaterials - <i>James Ede, Vireo Advisors LLC</i>	Cellulose Nanomaterials - <i>Ronald Sabo, USDA Forest Service, Forest Products Laboratory</i>
11:38	Beyond Buckling: Studying the Mechanical Properties of Cellulose Nanocrystal-Based Films - <i>Urooj Gill, McMaster University</i>	Establishing the Safety of Cellulose Nanomaterials for Food Related Uses - <i>Jo Anne Shatkin, Vireo Advisors LLC</i>	Morphology and Mechanical Properties Electrospun Polystyrene Fibers Containing Cellulose Nanocrystals (CNC) Modified with Various Functional Groups - <i>Mahsa Kalantari, University of Alberta</i>
12:00-2:00	<b>Session 35: Keynote Presentation and Lunch</b> <b>Session Chair: Derek Gray, McGill University</b> <b>Keynote Speaker: Jean-François Levasseur, Canadian Forest Service</b> <b>Canada's Innovation System – Producing Nanoproducts with a Macro effect!</b> <b>Room: Soprano AB</b>		

2:00-3:30	<b>Session 36: Quantitative Property Control for Cellulose Nanofibril Production</b> <i>Session Chair: Sindhu Seethamraju, National Institute of Standards and Technology</i> <b>Room: GSO A</b>	<b>Session 37: Cellulose Nanomaterial Product Development</b> <i>Session Chair: Jo Anne Shatkin, Vireo Advisors, LLC</i> <b>Room: GSO B</b>	<b>Session 38: Composites – Melt &amp; Dry Processing</b> <i>Session Chair: John Simonsen, Oregon State University</i> <b>Room: GSO C</b>	<b>Session 39: Student Session: Career Roundtable</b> <i>Session Chair: Stephanie Kedzior, McMaster University</i> <b>Room: Soprano C</b>
2:02	Understanding Longitudinal Wood Fiber Ultra-Structure for the Production of Cellulose Nanofibrils Using Disk Milling with Dilute Acid Prehydrolysis – <i>J.Y. Zhu, USDA Forest Service, Forest Products Laboratory</i>	<i>Nicole Starks, Forest Products Society</i>	Cellulose Nanofibrils Enhanced Polypropylene Composites for Fused Filament Fabrication: Nonisothermal Crystallization Kinetics and Thermal Expansion - <i>Lu Wang, University of Maine</i>	<i>Hosted by the Nano Student Committee</i>  - Wim Thielemans, <i>KU Leuven</i> - Jeffrey Youngblood, <i>Purdue University</i> - Orlando Rojas, <i>Aalto University</i> - <i>E. Johan Foster, Virginia Tech</i> - Sean Ireland, <i>FiberLean</i> - Linda Johnston, <i>National Research Council of Canada</i> - Jeffrey Gilman, <i>National Institute of Standards and Technology</i>
2:24	What is the Difference Between Different Cellulose Nanofibrils? The Quality Index- <i>Johanna Desmays, University Grenoble Alpes</i>	Challenges for the Commercialization of Cellulose Nanofibers (CNFs) - <i>Makoto Arai, Nippon Paper Industries Co., Ltd.</i>	Reactive Extrusion of Hydrophobic Polymer with Nanocellulose Filler for Improved Mechanical Properties – <i>Nirup Nagabandi, Essentium Materials</i>	
2:46	Optimization of the Reaction Conditions of TEMPO-Mediated Oxidation and the Fibrillation Process for the Production of Nanofibrillated Cellulose from Rice Hulls - <i>Guido de</i>	Cellulose Nanomaterials: The Road to Commercialization - <i>Jack Miller, Market-Intell LLC</i>	Processing Strategies for Incorporating Cellulose Nanocrystals in a Commercially Available Semicrystalline Thermoplastic - <i>Matthew</i>	



	<i>Titto, National Institute of Industrial Technology</i>		<i>Orr, Georgia Institute of Technology</i>
3:08	Fluorogenically Modified Cellulose Nanofibrils - <i>Jeremiah Woodcock, NIST</i>	Risk Assessment of Polymer Composites Containing Cellulose Nanofibrils (CNF) - Considerations of Industrial Production - <i>Heli Kangas, VTT Technical Research Centre of Finland Ltd.</i>	Development of the Continuous Production Process "Kyoto Process" of CNF Reinforced Plastics - <i>Hiroyuki Yano, RISH, Kyoto University</i>
3:30-4:00	<b>Break</b> <i>Room: Grand Salon Opera Foyer</i>		

4:00-5:30	<b>Session 40: Production and Characterization of Cellulose Nanomaterials</b> <b>Session Chair: Bharath Natarajan, National Institute of Standards and Technology &amp; Georgetown University</b> <b>Room: GSO A</b>	<b>Session 41: Standards and International/Commercial Measurement Needs</b> <b>Session Chair: Stephanie Beck, FPInnovations</b> <b>Room: GSO B</b>	<b>Session 42: Composites – Reactive Processing</b> <b>Session Chair: Ronald Sabo, USDA Forest Products Laboratory</b> <b>Room: GSO C</b>
4:02	Indigenous Bacterial Nanocellulose - <i>Lola Vars, Oregon State University</i>	Standards for Measurement and Specification of Cellulose Nanomaterials - <i>Brian Haydon, CSA Group</i>	Reducing Water Absorption in Cellulose Nanocrystal – Epoxy Composites - <i>Douglas Fox, American University</i>
4:24	Mechanochemical Phosphorylation of Cellulose Nanocrystals with Solid Phosphorylating Reagents - <i>Blaine Fiss, McGill University</i>	Survey of Measurement Methods for CNCs - <i>Jeffrey W. Gilman, NIST</i>	Epoxies Can Solve Moisture Problems in Nanocellulose Materials - <i>Lilian Medina, KTH Royal Institute of Technology</i>
4:46	Effect of Bound Oligosaccharide Layers and Surface Charge on Cellulose Nanocrystal-Water Interactions - <i>Elina Niinivaara, McMaster University</i>	On the Importance of Size Characterisation of Commercial Grades of Microfibrillated Cellulose - <i>Per A. Larsson, KTH Royal Institute of Technology</i>	Graft Modification of Cellulose Nanocrystals with CO <sub>2</sub> -Responsive Polymers via Controlled/Living Radical Polymerization - <i>Omar Garcia-Valdez, Queen's University</i>
5:08	Cellulose Nanofibril (CNF) Metrology - <i>Mahyar Mazloumi, National Research Council of Canada (NRC)</i>	Development of an Online Analyzer for Characterizing Cellulose Filaments - <i>Natalie Pagé, FPInnovations</i>	Effect of Nanocellulose Type and Surface Functionalization on Nanocellulose Coated Glass Fiber Reinforced Polyester Composite - <i>Joyanta Goswami, Georgia Institute of Technology</i>



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**CONFERENCE CONCLUDES: POST CONFERENCE WRAP-UP MEETING** (*Invitation Only*)

*5:30-6:30pm*

*Room: Symphonie 4*

### **Friday – 9 June 2017**

**9:00 -12:00**

*Producers Committee Meeting (Members Only)*

*Room: Symphonie I*