



TECHNICAL PROGRAM

As of 25-5-22 Subject to change

Monday 13 June 2022	
08:30 – 14:30	**Aalto University and VTT Tour
12:00 - 13:30	Student Committee Lunch <i>Nautica Room</i>
13:30 – 16:00	**CNM Characterization Workshop – Primary Characterization <i>Lead Instructors: Robert Moon, USFS and Johan Foster, University of British Columbia</i> <i>Pressroom</i>
16:00 - 17:30	Session 1: OPENING SESSION AND KEYNOTE <i>Saving the World is Good Business</i> <i>Nina Kopola, Director General & CEO, Business Finland</i> <i>Session Chair: Heli Kangas, VTT Technical Research Centre of Finland Ltd.</i> <i>Europaea Room</i>
17:30 - 19:00	Welcome Reception & Trade Fair <i>Europaea Foyer</i>
19:30 - 20:30	Young Professionals Mixer <i>Helsinki City Center</i>

TAPPI Nano 2022 Technical Program

*Invitation Only

**Additional registration fee required

Tuesday 14 June 2022			
08:30 - 10:00	Session 2: Paper & Packaging I Session Chair: Joice Kaschuk , Aalto University Room: Nordia	Session 3: Electronic Materials and Photonics for Emerging Applications Session Chair: Katariina Torvinen , VTT Technical Research Centre of Finland Ltd. Room: Baltica	Session 4: Cellulose Nanofibril Modification for Functional Wood Session Chair: Hannes Orelma , VTT Technical Research Centre of Finland Ltd. Room: Nautica
8:32	Overcoming the Sheet Sealing Phenomenon in High Nanocellulose Content Papers – Hamidreza Ahadian , Aalto University	Strong, Conformal, and Stretchable Cellulose Nanocomposite Films for Skin-mounted Electronics - Vinay Kumar , VTT Technical Research Centre of Finland	Use of Microfibrillated Cellulose in Wood Coatings - Enabling High Loadings of Microfibrillated Cellulose for Application in Wood Coatings with Improved Functionalities: A Novel Approach Using Emulsion Polymerisation - Claudia Schirp , Fraunhofer Institute for Wood Research, WKI
8:54	In Situ Zinc Oxide Production on Nanocellulose for Active Food Packaging - Francisco Silva , Universidade Católica Portuguesa	Dopamine-conjugated Carboxymethylcellulose and Intermolecular Self-Assembly with Carbon Nanotubes for Multifunctional Wearables - Tianyu Guo , University of British Columbia	Optimization of Surface Tension-Directed Self-Assembly of Cellulose Nanocrystals for Printing Birefringent Micro-Figures - Mehdi Tajvidi , University of Maine
9:16	Energy and Sensing Technologies Towards Green Smart Packaging – Gustav Nystrom , Empa	Cellulose Optical Fibres for Advanced Sensing Applications - Aayush Kumar Jaiswal , VTT Technical Research Centre of Finland	Nanoclay-incorporated Oven-dried Cellulose Nanofibril Foam for Eco-friendly Flame Retardant - Shin Young Park , Seoul National University
9:38	Cellulose-based Biofoam for Temperature-controlled Packaging - Xiao Zhang , Washington State University	Sustainable Superblack Materials from Wood For Light Management - Bin Zhao , Aalto University	Use of β -cyclodextrin Grafted Chitosan Immobilized onto Delignified Wood as Adsorbent in Water Remediation - Diego Gomez Maldonado , Auburn University
10:00 - 10:30	Break Room: <i>Europaea Foyer</i>		

TAPPI Nano 2022 Technical Program

*Invitation Only

**Additional registration fee required

10:30 - 12:00	Session 5: Paper & Packaging II Session Chair: Sara Roldan Velasquez , University of Strathclyde Room: Nordia	Session 6: Biobased Materials for Energy Storage and Management Session Chair: Yun Jin , FiberLean® Technologies Ltd. Room: Nautica	Session 7: CNF for Applied Materials Session Chair: Isabelle Capron , INRAE Room: Baltica
10:32	Pilot Machine Trials with a New MFC Surface Applicator for Paper and Board Production - Marc Foulger , Valmet	Advantages and Drawbacks of Nanocellulose Materials for Solar Cells Substrates - Joice Jaqueline Kaschuk , Aalto University	Interfacially Separated Micro-Aerogels from Hybrid Emulsions - Milad Kamkar , University of British Columbia
10:54	Cellulose Nanomaterials for Tree Fruit Frost Protection - Xiao Zhang , Washington State University	Cellulose Nanomaterials Enable Lithium-ion, Sodium-ion and Zinc-ion Batteries with Extended Operation Lifespans – Erlantz Lizundia , University of the Basque Country	Improvement of the Structural Stability of the Oven-dried CNF Foam - Hye Jung Youn , Seoul National University
11:16	Role of Rheology in Roll-To-Roll Coating of High-Solids Content Nanocellulose - Rajesh Koppolu , Åbo Akademi University	Dry-Jet Wet Spinning of Tempo Oxidized Nanocellulose Conduits for Energy Storage Textiles - Guillermo Reyes Torres , Aalto University	Screen-Printing of Micro/Nano-Fibrillated Cellulose for an Improved Moisture Management and Abrasion Resistant Properties of Flame-Resistant Fabric - Vanja Kokol , University of Maribor
11:38	Cellulose Nanofiber Coatings for Food Packaging Applications - Gilberto Siqueira , Empa	Energy Pellets from Whole-wheat Straw Processed with a Deep Eutectic Solvent: A Comprehensive Thermal, Molecular and Environmental Evaluation - Ran Bi , BPI	Morphology and viscoelastic properties of dried-redispersed organic acid modified cellulose nanofibrils - Amaka J. Onyianta , Bristol Composites Institute (ACCIS)
12:00 - 14:00	Session 8: Lunch with Presentation Sponsored by FiberLean® Technologies Ltd. FiberLean®MFC – It’s like we are printing you money! Sean Ireland, Vice President Business Development Session Chair: Maria Soledad Peresin , Auburn University Room: Fennia I and II		
14:00 - 15:30	Session 9: Adhesives Session Chair: Yun Jin , FiberLean® Technologies Ltd. Room: Nordia	Session 10: Renewable Materials I Session Chair: Bruno Dufau Mattos , Aalto University Room: Baltica	Session 11: Biomedical Session Chair: Marcus Johns , University of British Columbia Room: Nautica
14:02	The enhancement of UF glued particleboard by cellulose nanofibers - John Simonsen , Oregon State University	Production of Various Carboxylated Cellulose Nanocrystals from Beer Residuals - Timo Pääkkönen , Aalto University	Cellulose Nanocrystal Reinforced Amphiphilic Polymer Conetworks Based on Peptide Polymer Hybrids - Sara Roldan Velasquez , University of Strathclyde

TAPPI Nano 2022 Technical Program

*Invitation Only

**Additional registration fee required

14:24	Disperse Nanocellulose into Viscous Polymers as Composite Materials - Roland Gong , University of Wisconsin-Stevens Point	Unique Reactivity of Cellulose Mediated by Confined Water – Blaise Tardy , Khalifa University	Brush and Linear PEG-Grafted Cellulose Nanocrystals for Drug Delivery - Megan Roberts , Mount Allison University
14:46	Dried vs. Never-Dried Carboxylated Cellulose Nanocrystals: Branching Out to Stickier Nanocomposite Adhesives - Vida Gabriel , University of Ottawa	In Situ Oligosaccharide Surface Modification of Cellulose Nanocrystals - Elina Niinivaara , University of British Columbia	The Effect of Surface Chemistry Modification of Wood-Based Nanocellulose on Rat Stem Cell Response - Kristin Syverud , RISE PFI
15:08	Cellulose Nanocrystal Surface Property Effects on Emulsion-based Adhesive Performance - Marc A. Dubé , University of Ottawa	Novel Enzymatic Tools to Fabricate Nanofibrillated Cellulose - Ana Villares , INRAE	Cellulose Nanocrystals Modified Substrates for Mechanical Compatibility of Stem Cells - Jeremy Woodcock , NIST
15:30 - 16:00	Break Room: Europaea Foyer		
16:00 - 17:30	Session 12: In-situ Polymerization & Thermosets Session Chair: Milad Kamkar , University of British Columbia Room: Nautica	Session 13: Product Stewardship and Safety in Applications Session Chair: John Simonsen , Oregon State University Room: Baltica	Session 14: Rapid Fire Moderator: Megan Roberts , Mount Allison University Room: Nordia
16:02	Nanocellulose for Stronger or Lighter Glass Fiber Polyester Composites - Kyriaki Kalaitzidou , Georgia Institute of Technology	Qualifying Novel Bio-Based Materials for the Market: EHS, Sustainability and Beyond - Jo Anne Shatkin , Vireo Advisors	
16:22	Cellulose Nano Crystal Acetylation: A Straight-Forward Modification to Improve the Desalination Permeability-Selectivity Trade -Off of Reverse Osmosis Membranes - Fatemeh Abedi , University of Ottawa	Safety, Regulation, and Testing of Novel Bio-Based Materials for Food Packaging Applications - Kimberly Ong , Vireo Advisors	
16:46	Reactive Cellulose Nanomaterials for Polymer Composites - Douglas Fox , American University	Commercializing Microfibrillated Cellulose Products: Regulatory Aspects - David Skuse , FiberLean Technologies Ltd.	

17:02	Aqueous Functionalization of Cellulose Nanofibrils by Grafting-Through Polymerizations to Create Reinforcements for Composites - William Gramlich , University of Maine	Safer by Design Toolbox to Advance Functionalized Cellulose Nanomaterials - James Ede , Vireo Advisors	
17:30 - 19:00	Session 15: Poster Session, Student Poster Competition and Product Showcase <i>Room: Europaea Foyer</i>		
Wednesday 15 June 2022			
07:30 - 08:00	*NANO Research Committee Meeting (Subcommittee Chairs Only) <i>Room: Pressroom</i>		
08:00 - 08:30	*NANO Research Committee Meeting (Full Committee) <i>Room: Pressroom</i>		
08:30 - 10:00	Session 16: Cellulose Nanocrystals for Applied Materials Session Chair: Elina Niinivaara , University of British Columbia <i>Room: Baltica</i>	Session 17: Renewable Production II Session Chair: Tianyu Guo , University of British Columbia <i>Room: Nordia</i>	Session 18: Self-Assembled and Ordered Materials I Session Chair: Blaise Tardy , Aalto University <i>Room: Nautica</i>
08:32	Octylamine Modified Cellulose Nanocrystal Enhanced Stabilization of Pickering Emulsions for Self-Healing Composite Coatings - Guofan Xu , Bristol Composites Institute (ACCIS)	Acidic Thiourea Delignification of Softwood Tt Produce Cellulose Nanofibers - Juho Sirviö , University of Oulu	Formation of Channel Structures in the Photosynthetic Cellulose Nanofiber Hydrogel - Jinho Hyun , Seoul National University
08:54	The Sticky Road to Understanding the Effect of Cellulose Nanocrystal Surface Chemistry on the Performance of Latex-Based Pressure-Sensitive Adhesives - Julia Antoniw , University of British Columbia	Green Synthesis Approaches to Prepare Lignin Nanoparticles: A Comparison Study - Maarit Lahtinen , University of Helsinki	Engineering Functional Nanocellulose Porous Materials through the Assembly of Metal-Phenolic Networks - Bruno Mattos , Aalto University

09:16	Bicontinuous Emulsion & Aerogels via Chitin Nanocrystal Jamming - Yi Lu , <i>University of British Columbia</i>	Enzymes Recovery during Cellulose Fibers in Situ Hydrolysis in A Twin-Screw Extruder for Cellulose Nanofibrils Production - Gabriel Banvillet , <i>University of British Columbia</i>	Superstable Wet Foams and Lightweight Solid Composites from Nanocellulose and Hydrophobic Particles - Roozbeh Abidnejad , <i>Aalto University</i>
09:38	Processes for Drying Cellulose Nanocrystal Pickering Emulsions into Oil Powders - Marc Massicotte , <i>University of British Columbia</i>	Sustainable and Tailored Production of Carboxylated Cellulose Nanomaterials (with or without lignin) using Maleic Acid - Junyong Zhu , <i>USDA Forest Products Lab</i>	3D Printing of Nanocellulose-Based Inks Embedding Diatoms to Assess Water Quality - Rani Boons , <i>Empa</i>
10:00 - 10:30	Break <i>Room: Europaea Foyer</i>		
10:30 - 12:00	Session 19: Understanding Cellulose Nanomaterials for High End Applications Session Chair: Kristin Syverud , <i>RISE PFI and NTNU</i> Room: <i>Baltica</i>	Session 20: Renewable Production III Session Chair: Gabriel Banvillet , <i>University of British Columbia</i> Room: <i>Nordia</i>	Session 21: Self-Assembled and Ordered Materials II Session Chair: Tiffany Abitbol , <i>RISE</i> Room: <i>Nautica</i>
10:32	Bio-Inspired Preparation of Dissolved Cellulose on Alkali Conditions for Multidimensional Hierarchical Structures - Guillermo Reyes Torres , <i>Aalto University</i>	Quality Analysis of Micro-Fibrillated Cellulose Production Trial Results - Juha-Pekka Huhtanen , <i>Valmet</i>	Surface Adsorption of Cellulose Derivatives on Cellulose Nanocrystals - Francesco D'Acerno , <i>INRAE</i>
10:54	<i>Phosphorylated Cellulose Nanocrystals: Urea to Acid Ratios and Effects on Surface Charge</i> - Anita Etale , <i>Bristol Composites Institute (ACCIS)</i>	Cellulose Fiber Mechanical Fibrillation Process Optimization: A Computational Flow Dynamics Approach - Amaud Venard , <i>Univ. Grenoble Alpes, CNRS, Grenoble INP, LGP2</i>	Exploring the Impact of Functional Groups on the Interfacial Interactions of Constructs of Natural Biopolymers - Blaise Tardy , <i>Aalto University</i>
11:16	Coupled Electromagnetic and Heat Transfer Analysis for Drying of Ligninocellulosic Foams Made using Cellulose Nanofibrils - Mohammad Tauhiduzzaman , <i>University of Maine</i>	Once Dried Nanocellulose's Functionality After Drying and Redispersing Phase and Performance in Applications - Jan Lehmonen , <i>Pennsylvania State University</i>	Self-assembled Nanocellulose Meets Swimming Microalgae: Unveiling Living Colloid Dynamics in Cholesteric Liquid Crystals - Guang Chu , <i>Aalto University</i>
11:38		Methods to produce dry nanoscale cellulose nanocrystal powders: challenges and opportunities - Douglas Gardner , <i>University of Maine</i>	Dense and Organized Cellulose Nanocrystals Emulsion Droplets as Model to Study Enzyme Action - Hugo Voisin , <i>INRAE - Centre de recherche Pays de la Loire</i>

TAPPI Nano 2022 Technical Program

*Invitation Only

**Additional registration fee required

12:00 - 14:00	<p align="center">Session 22 - Lunch with Presentation Sponsored by Valmet</p> <p align="center">Speaker: Riikka Timonen, Director and Business Accelerator <i>Accelerating New Business Growth from Circular Economy</i></p> <p align="center">Session Chair: Mehdi Tajvidi, University of Maine Room: Fennia I and II</p>		
14:00 - 15:30	<p>Session 23: Qualifying Materials for Sustainability Session Chair: Elisa Ferreira, University of British Columbia Room: Nordia</p>	<p>Session 24: Elucidating CNCs Structure to Enhance Applicability and Performance Session Chair: Diego Gomez Maldonado, Auburn University Room: Baltica</p>	<p>Session 25: Paper & Packaging III Session Chair: Jimmy Jong, FPInnovations Room: Nautica</p>
14:02	Consumer Gatekeeping in Sustainable Materials Streams - Nasreen Khan, Georgia Institute of Technology	What are the Main Factors Governing the Thermal Stability of Dry Vs. Wet Cellulose Nanocrystals? Emily Cranston, University of British Columbia	Continuous production of nanocellulose films with limited heating - Karl Hakansson, RISI
14:24	CNC/AgNP Hybrids Designed for Safer-by-design Biocides in Paints - Isabelle Capron, INRAE	High-Resolution Solution-State NMR Analysis of Nanocelluloses in Ionic Liquid Electrolyte - Alistair King, University of Helsinki / VTT	CNF coatings for all-biobased molded pulp lidded containers - Jeffrey Youngblood, Purdue University
14:46	Cellulose Nanocrystals for Adsorption and Sensing Applications – Maria Soledad Peresin, Auburn University	Tunable and Controllable CNC Surface Properties for Organic Electronic Applications - Wadood Hamad, FPInnovations	Modification of Nanocellulose Films in Deep Eutectic Solvents Using Vinyl Esters - Mathias Lakovaara, University of Oulu
15:08	Challenges On Specific Surface Area Analysis of Cellulosic Materials - Anett Kondor, Surface Measurement Systems Ltd.	Autofluorescent Spectroscopy for Rapid Quality Control Monitoring of Cellulose Nanocrystals - Marcus Johns, University of British Columbia	Dewatering of Cellulose Nanofibrils Using Ultrasound - Udita Ringania, Georgia Tech
15:30 - 16:00	<p align="center">Break</p> <p align="center">Room: Europaea Foyer</p>		
16:00 - 17:30	<p align="center">Session 26: End User Panel</p> <p align="center">Moderator: Hamdy Khalil, Wood Bridge Foam Corporation Room: Europaea</p>		
	<p>Panelist: Kari Luukko, UPM Biomedicals Juha Salmela, Spinnova Estevão Mai, Suzano</p>		
18:30 - 22:00	<p align="center">**Conference Dinner</p> <p align="center">18:30 - 22:00 Restaurant Saaristo</p>		

TAPPI Nano 2022 Technical Program

*Invitation Only

**Additional registration fee required

Thursday 16 June 2022		
8:30 - 10:00	Session 27: Biocomposites & Biodegradable Polymers Session Chair: Milad Kamkar , University of British Columbia Room: Nordia	Session 28: Responsive Materials Session Chair: Joice Kaschuk , Aalto University Room: Baltica
8:32	Effect of Chitin-Protein Interactions in the Fabrication of High-Performance Materials - Luiz Greca , Aalto University	Bioactive Bacterial Nanocellulose- Marina Mehling , University of British Columbia
8:54	Surface-Modified Microfibrillated Cellulose Reinforced Biocomposites - Katie Copenhaver , Oak Ridge National Laboratory	Functionalized Cellulose Nanocrystals as Active Reinforcements for Light Actuated 3D Printed Structures- Luca Muller , Empa
9:16	Effect of Electrospinning Parameters on Polylactic Acid / Nanocellulose Biocomposite Fibers - Burcu Sari, Middle East Technical University	Cellulose-Based Nanocomposite with High Wet Strength, Antioxidant, and UV-Blocking Properties via Facile Interfacial Design - Erfan Kimiaei , Aalto University
9:38		Setting priorities in CNF particle size measurement: What is needed vs. what is feasible - Andreas Fall , RISE
10:00 - 10:30	Break Room: Europaea Foyer	
10:30 - 12:00	Session 29: Grafting & Drying Session Co-Chairs: Katie Copenhaver and Meghan Lamm , Oak Ridge National Laboratory Room: Nordia	Session 30: Sustainable Production Session Chair: Guillermo Reyes Torres , Aalto University Room: Baltica
10:32	A Facile Aqueous-Phase Polyimine Functionalization of Cellulose for Effective Drying and Composite Reinforcement - Meghan Lamm , Oak Ridge National Laboratory	Ultrasonic welding of papers coated with cellulose microfibrils and nanocrystals - Quentin Charlier , LGP2
10:54	Melt Extrusion of Poly (methyl methacrylate) (PMMA)/Cellulose Nanocrystal (CNC)-based Nanocomposite - Whirang Cho , American University	Sustainable Approaches to Produce Cellulose Nanocrystals with Carboxylic Acid Moieties - Julien Bras , Univ. Grenoble Alpes, Grenoble INP, CNRS, LGP2
11:16	Nanocellulose as Reinforcement in PLA Based Packaging Materials: Dry or Wet Addition in Extrusion Processes? - Pilar Albaladejo Sánchez , ITENE	Challenges in Water Treatment Based on Cellulose Nanomaterials - Andreas Mautner , University of Vienna
11:38	Novel Lattice Structures Made of Wood Flour and Cellulose Nanofibrils Using Microwave Drying - Islam Hafez , University of Maine	Incorporating Cellulose Nanofibers into Biodegradable Polymers for Use in Additive Manufacturing - Alyson Manley , University of Maine
12:00 - 14:00	Session 31: Keynote Presentation and Lunch Keynote Speaker: Alexander Bismarck , University of Vienna Session Chair: Eero Kontturi , Aalto University Room: Fennia I and II	

TAPPI Nano 2022 Technical Program

*Invitation Only

**Additional registration fee required

14:00 - 15:30	Session 32: Paper & Packaging IV Session Chair: Ulla Forsström , VTT Technical Research Centre of Finland Ltd. Room: Nordia	Session 33: Self-Assembled III Session Chair: Maria Soledad Peresin , Auburn University Room: Baltica	Session 34: Student Session: Career Roundtable Moderator: Megan Roberts , Mount Allison University Room: Nautica
14:02	Nanocellulose from Industrial Residues Applied in Paper and Board Industry – Rafael Sánchez , ITENE	Influence of Zeta Potential on the Drainage Rate and Film Properties of Cellulose Nanofiber/Precipitated Calcium Carbonate Suspensions - Pradnya Rao , University of Maine (Presented by - William Gramlich)	Panelist: Jeffrey P Youngblood , Purdue University Anni Karppinen , Stora Enso
14:24	Turning Recycled Old Corrugated Cardboard (OCC) into High Gas Barrier Packaging Films - Md Ikramul Hasan , University of Maine	The Presence of Pectin in Birch Glucuronoxylan (GX) Is Essential for the Formation of Nanoscale Oil-in-water Emulsion Droplets - Maarit Lahtinen , University of Helsinki	Katariina Solin , VTT Technical Research Centre of Finland Kimberly Ong , Vireo Advisors
14:46	Minimizing Oxygen Permeability of Cellulose/Chitin Nanomaterials as Multilayer Coatings by Tuning Chitin Deacetylation - Yue Ji , Georgia Institute of Technology	Cellulose Nanomaterials as Flotation Agents: Interactions of Silylated CNCs with Silica and Sulfidic Mineral Surfaces - Feliciano Ludovici , University of Oulu	
15:08	The Effect of Feedstock on the Production of CMF - Colleen Walker , University of Maine	Alternative methods to produce cellulose nanofibrils-based aerogels for water treatment applications - Md Musfiqur Rahman , University of Maine	
15:30 - 16:00	Break Room: Europaea Foyer		
16:00 - 17:30	Session 35: Paper & Packaging V Session Chair: Douglas Fox , American University Room: Nordia	Session 36: Applications for Sustainable Materials Session Chair: Marina Mehling , University of British Columbia Room: Baltica	
16:02	Adhesion of Microfibrillated Cellulose Layers to Paper and Board - Lars Axrup , Stora Enso	Valida – Natural Cellulose as a Multifunctional Stabilizer in Chemically Foamed Concrete - Yanwu Zhou , Sappi Netherlands Services BV	
16:22	The Unique Properties of Microfibrillated Cellulose and Their Exploitation in Paper and Paperboard - Jon Phipps , FiberLean Technologies Ltd.	Naturally Hydrophobic Lightweight Materials for Oil Spill Clean Up - Elisa Ferreira , University of British Columbia	

16:46	Contact Dewatering of Cellulose Nanofibrils Using Polymer Powder: A Feasible and Efficient Method for Bio-Based Composites Processing - Alexander Collins , University of Maine	The Adsorption Behavior of Wood-Based Nanomaterials Towards Pharmaceuticals - Melissa Agustin, University of Helsinki
17:02	Recyclable Cellulose Nanocomposites for Food Serving Applications with Enhanced Water Resistance - Rakibul Hossain , University of Maine	
17:30 - 18:30	2022 Nano Conference Wrap up Meeting <i>Room: Nautica</i>	
18:30 - 19:30	2023 Nano Conference Planning Meeting (Invitation Only) <i>Room: Nautica</i>	

	Friday 17 June 2022	
8:00 - 11:00	Producers Committee Meeting (Invitation Only) <i>Room: Nautica</i>	