




## TECHNICAL PROGRAM

As of 5-15-19 - Subject to change – please check the conference app for updates.


| <b>Monday<br/>3 June 2019</b> |  |
|-------------------------------|--|
| <b>9:00 - 10:00</b>           | <b>TAPPI Welcome</b><br>Professor Emily Cranston, University of British Columbia<br><b>TAPPI Keynote</b><br><b>Mr. Kazufumi Yamasaki</b> , Executive Vice President<br><i>Nippon Paper Industries Co., Ltd., Convention Hall A</i> |
| <b>10:00 – 10:30</b>          | <b>Break</b><br><i>Convention Hall B</i>   |
| <b>10:30 – 11:15</b>          | <b>Keynote</b><br><i>Convention Hall A</i><br>Overview of Canada – <b>Professor Emily Cranston</b> , University of British Columbia  |
| <b>11:15 – 12:00</b>          | <b>Keynote</b><br><i>Convention Hall A</i><br>Overview of Europe – <b>Professor Lars Berglund</b> , KTH Royal Institute of Technology  |
| <b>12:00 - 13:30</b>          | <b>Lunch &amp; Mentor/Mentee Meet &amp; Greet</b><br>Sponsored by:<br><br><small>Nanocellulose Forum</small><br><i>Convention Hall B</i>       |
| <b>13:30 – 14:15</b>          | <b>Keynote</b><br><i>Convention Hall A</i><br>Overview of US – <b>Dr. Alan Rudie</b> , USDA Forest Product Laboratory  |
| <b>14:15 – 15:00</b>          | <b>Keynote</b><br><i>Convention Hall A</i><br>Overview of China - <b>Professor Dr. Yong Huang</b> , Technical Institute of Physics and Chinese Academy of Sciences   |
| <b>15:00 - 15:30</b>          | <b>Break</b><br><i>Convention Hall B</i>   |
| <b>15:30 – 16:15</b>          | <b>TAPPI Gold Sponsor Speaker</b>  |

Abbreviation Key:

CNF = Cellulose nanofibers

CNC – Cellulose nanocrystals


CNM = Cellulose nanomaterials

|   |  |   |  |
|---|--|---|--|
| 16:15 – 17:00                                 | <p align="center"><b>Keynote</b><br/> Overview of Nanocellulose R&amp;D in Japan<br/> <b>Professor Akira Isogai</b>, University of Tokyo<br/> Convention Hall A</p>  |   |  |
| 17:00 - 18:30                                 | <p align="center"><b>Welcome Reception</b><br/> Sponsored by:<br/> <br/> Convention Hall B</p>   |   |  |
| 18:30 - 20:00                                 | <p align="center"><b>Young Professionals Mixer</b><br/> Convention Hall A</p>  |   |  |
| <p><b>Tuesday</b><br/> <b>4 June 2019</b></p> |  |   |  |
| 8:30 – 10:00                                  | <p><b>Session 2: Automotive Processing</b><br/> <b>Session Chair: Priya Venkatraman, Virginia Tech</b><br/> Room 301</p>   | <p><b>Session 3: Emulsions, Gels and Foams I</b><br/> <b>Session Chair: Yaman Boluk, University of Alberta</b><br/> Room 201A</p>   | <p><b>Session 4: Production of CNFs</b><br/> <b>Session Chair: Shaul Lapidot, Melodea Ltd.</b><br/> Room 201B</p>  |
| 8:32  | <p>CNF Reinforced Thermoplastic Resins for Lightweight Parts - <b>Takeshi Semba</b>, Kyoto Municipal Institute of Industrial Technology and Culture</p>  | <p>Expanding Specific Strength and Toughness of Aerogels by Introduction of Chiral Nematic Order – <b>Blaise Tardy</b>, Aalto University</p>  | <p>Mineral/ Microfibrillated Cellulose Composite Materials: Recycled Fibres, Engineered Minerals and New Product Forms - <b>David Skuse</b>, FiberLean Technologies Limited</p>  |
| 8:54  | <p>Road to the Automotive Parts Using CNFs Materials – <b>Hiroyuki Yano</b>, RISH, Kyoto University</p>  | <p>Robust Shape Memory Nanocellulose-Based Aerogels Decorated with Silver Nanoparticles for Dye Discoloration – <b>Weihua Zhang</b>, ÅBO Akademi University</p>                             | <p>New High Solid Content CNFs Production by Twin Screw Extrusion Optimization - <b>Julien Bras</b>, Grenoble INP</p>  |
| 9:16  | <p>Unprecedented Ultrahigh Expansion Injection-Molded Polypropylene Foams with Hydrophobic-Modified CNFs – <b>Masahiro Ohshima</b>, Kyoto University</p>   | <p>Cost-Effective and Functional Emulsions Stabilized with Renewable Particles – <b>Long Bai</b>, Aalto University</p>  | <p>Combination of Mechanical Treatments to Optimize CNF Production and Understand the Role of Cumulated Strain on Nanofibrillation for Industrial Production - <b>Gabriel Banvillet</b>, Arjowiggins Creative Papers</p> |
| 9:38  | <p>Development of Lightweight Foamed Plastics with High Mechanical Properties by Using Hydrophobic Modified CNF and Controlling Cell Morphologies – <b>Akihiro Ito</b>, Kyoto Municipal Institute of Industrial Technology and Culture</p> | <p>New Applications of Cross-Linked CNC Aerogels – Energy Production/Storage Devices, Sorbents, Drug Delivery and Bone Implants – <b>Emily Cranston</b>, University of British Columbia</p> | <p>Steam Pretreatment Enhancing Productivity of CNFs from Oil Palm Biomass - <b>Hidayah Ariffin</b>, Universiti Putra Malaysia</p>   |
| 10:00 -10:30                                  | <p align="center"><b>Break</b><br/> Convention Hall B</p>  |   |  |

|                      |  |  |  |
|----------------------|--|--|--|
| <b>10:00 – 16:00</b> | <b>Nanocellulose Exhibition in TAPPI Nano</b><br><i>Convention Hall B</i>  |  |  |
| <b>10:30 - 12:00</b> | <b>Session 5: New Emerging Applications</b><br><b>Session Chair: Aji Mathew,</b><br><i>Stockholm University</i><br><i>Room 301</i>                                   | <b>Session 6: Plant Based Polymer Composites</b><br><b>Session Chair: Johan Foster,</b><br><i>Virginia Tech</i><br><i>Room 201A</i>                                | <b>Session 7: Flexible Bio-Electronics</b><br><b>Session Chair: Wadood Hamad,</b><br><i>FPIInnovations</i><br><i>Room 201B</i>         |
| <b>10:32</b>         | Cellulose Biohybrid Foams – Processing, Properties and Applications - <b>Gustav Nyström, EMPA</b>  | High-Performanced Bioplastic Blends as Matrix for Renewable Nanomaterials - <b>Kunyu Zhang, Tianjin University</b>   | Substrates Based on CNFs for Printed Electronics and Optics – <b>Katariina Torvinen, VTT Technical Research Centre of Finland Ltd.</b> |
| <b>10:54</b>         | The Role of Chemistry in High Performance Cement via CNC Addition - <b>Jeffrey Youngblood, Purdue University</b>   | Preparation and Pore Regulation of Carboxyethylated Micro-/Nano-Cellulose Films - <b>JingHuan Chen, China National Pulp and Paper Research Institute Co., Ltd.</b> | Preparation and Application of Nanocellulosic Functional Materials - <b>Feng Xu, Beijing Forestry University</b>                       |
| <b>11:16</b>         | CNCs for Foam Stability in Cellular Concrete - <b>Vivek Bindiganavile, University of Alberta</b>   | Morphology and Properties of CNC-Based Biocomposites With Various Compositions – <b>Emilia Csiszar, Budapest University of Technology and Economics</b>            | Highly Transparent Cellulose Films for Electronic Applications – <b>Zhiqiang Fang, South China University of Technology</b>            |
| <b>11:38</b>         | Edible Bio-Based Oleofilms from Nanocellulose-Stabilized Pickering Emulsions for Active Edible Barriers - <b>Luis Alexandro Valencia Lopez, Stockholm University</b> | Robust and Non-Hazardous Porous Constructs Enabled by Compositing Nanoparticles with Nanocelluloses - <b>Bruno Mattos, Aalto University</b>                        | Cellulose Based Functional Materials in Electrical and Electrochemical Flexible Devices – <b>Luis Pereira, CENIMAT/13N</b>             |
| <b>12:00 – 13:30</b> | <b>Lunch on Your Own</b>   |  |  |
| <b>13:30 – 16:30</b> | <b>CNM Characterization Workshop: Primary Characterization</b><br><b>(additional registration fees required)</b><br><i>Room 202</i>                                  |  |  |
| <b>13:30 – 17:00</b> | <b>Cellulose Nanomaterial Safety: Building a Bridge from Theory to Practice Workshop</b><br><b>(additional registration fees required)</b><br><i>Room 203</i>        |  |  |
| <b>17:00-18:30</b>   | <b>Session 8: Poster Session and Student Poster Competition</b><br><i>Convention Hall B</i>  |  |  |

**Wednesday  
5 June 2019**

|                      |   |  |  |
|----------------------|---|--|--|
| <b>7:30 –8:30</b>    | <b>NANO Research Committee Meeting (Invitation Only)</b><br><i>Room 203</i>   |  |  |
| <b>8:30 -10:00</b>   | <b>Session 9: Emulsions, Gels and Foams II</b><br><b>Session Chair: Eero Kontturi,</b><br><i>Aalto University<br/>Room 301</i>  | <b>Session 10: Measurement of Surface Interactions</b><br><b>Session Chair: Linda Johnston,</b><br><i>Metrology, National Research Council Canada / Government of Canada<br/>Room 201A</i> | <b>Session 11: Production of Rod-Shaped CNMs</b><br><b>Session Chair: Mehdi Tajvidi,</b><br><i>University of Maine<br/>Room 201B</i>                       |
| <b>8:32</b>          | Rheological Characterization of Medium and High Internal Phase Oil-in-Water Pickering Emulsions Stabilized with CNCS – <b>Chuanwei Miao,</b><br><i>FPIInnovations</i>                       | Hydrophobization of TEMPO Oxidized CNF – <b>Shinichi Onogi,</b><br><i>Nippon Paper Industries, Co., Ltd.</i>   | Developments in CNC Commercialization - Al-Pac's Experience – <b>Geoff Clarke,</b><br><i>Alberta-Pacific Forest Industries Inc.</i>                        |
| <b>8:54</b>          | Dual Functions of CNF in Oil-in-Water Emulsion: Pickering Emulsifier and a Unique Dispersion Stabilizer – <b>Yohsuke Goi,</b><br><i>DKS Co. Ltd.</i>  | Atomic Force Microscopy as a Tool to Probe Nanocellulose Surface: Possibilities and Challenges – <b>Aji Mathew,</b><br><i>Stockholm University</i>   | Continuous Compressed Cellulose CNC Reactor Demonstration at Low Acid Ratios – <b>James Lockhart,</b><br><i>NORAM Engineering and BC Research</i>          |
| <b>9:16</b>          | Fabrication of Edible Oil-in-Water Pickering Emulsions by Microfluidization Using Nanocellulose: Impact on In Vitro Digestion of Triglyceride – <b>Long Bai,</b><br><i>Aalto University</i> | Dynamic Analysis of Poly ( $\epsilon$ -Caprolactone) in Cellulose/Poly ( $\epsilon$ -Caprolactone) Composites with Solid-State NMR – <b>Min Xu,</b><br><i>East China Normal University</i> | CNC Production and Applications Development – <b>Shaul Lapidot,</b><br><i>Melodea, Ltd.</i>  |
| <b>9:38</b>          | Facile Fabrication of Robust Self-Standing Nanochitin Hydro-/Aerogel – <b>Liang Liu,</b><br><i>Nanjing forestry University</i>  | Rheological Properties of Dilute Nanocellulose Dispersions – <b>Reina Tanaka,</b><br><i>Forestry and Forest Products Research Institute</i>  | Production of Various Hydrolyzed Cellulosic Materials in a Gas/Solid Reactor Utilizing Pressurized HCl – <b>Timo Pääkkönen,</b><br><i>Aalto University</i> |
| <b>10:00 -10:30</b>  | <b>Break</b><br><i>Convention Hall B</i>  |  |  |
| <b>10:00 – 15:30</b> | <b>Nanocellulose Exhibition in TAPPI Nano</b><br><i>Convention Hall B</i>   |  |  |

|               |   |   |   |
|---------------|---|---|---|
| 10:30 -12:00  | <b>Session 12: Self-Standing CNM Films/Nanopapers and Process Optimization</b><br><b>Session Chair: Julien Bras,</b><br>Grenoble INP<br>Room 301  | <b>Session 13: CNM Morphology</b><br><b>Session Chair:</b><br>Room 201A   | <b>Session 14: CNM Modification for Polymer Processing</b><br><b>Session Chair: Jeffrey Youngblood,</b><br>Purdue University<br>Room 201B   |
| 10:32         | Manufacture of Transparent Paper Using Surface Nanofibrillated Cellulose Fibers – <b>Wenxia Liu,</b> Qilu University of Technology  | Nanostructural Properties and Twist Periodicity of CNFs with Variable Charge Density – <b>Mario Arcari,</b> ETH Zurich Department of Health Sciences and Technology         | Nano Cellulose Composite with Various type of Thermoplastic Resins and Their Enhanced Mechanical Strength and Thermal Properties – <b>Ryohei Mori,</b> Green Science Alliance Co., Ltd. |
| 10:54         | Designing Flexible, Smooth, Highly Transparent and Hazy CNF Films – <b>Christian Aulin,</b> RISE  | A Simple Framework for the Complete Morphological Characterization of CNFs to Enable Accurate Prediction of their Assembly Behavior - <b>Blaise Tardy,</b> Aalto University | Modification of CNCs With Triazine Derivates and Their Reinforcement for PLA Composite – <b>Xue Jiang,</b> Jiangnan University  |
| 11:16         | Refined and Homogenized Nanocellulose: Fiber Quality, Energy and Strength – <b>Shaun Ang,</b> Monash University   | Wet-TEM Investigation of Surface-Sulfated CNFs Dispersed in Water Gels - <b>Masaaki Hisa,</b> KRI, Inc.   | Interfacial Control of TEMPO-Oxidized CNF Toward Composites – <b>Shunsuke Fukui,</b> Kao Corporation  |
| 11:38         | Optimising Sheet and Fibre Properties to Reduce Energy Consumption of Nanocellulose Production – <b>Warren Batchelor,</b> Monash University   | Particle Size Distributions for CNCs: An Interlaboratory Comparison – <b>Linda Johnston,</b> Metrology, National Research Council Canada / Government of Canada             | Tailoring Interfacial Layer Structures for Nanocellulose/Polymer Composites – <b>Hiroto Soeta,</b> University of Tokyo  |
| 12:00 - 13:30 | <b>Lunch Provided</b><br>Sponsored by:<br><br><b>Convention Hall B</b><br><b>Producers Committee Meeting (Invitation only)</b><br>Room 203 |   |   |
| 13:30-15:00   | <b>Session 15: Coatings, Films and Other CNM Applications</b><br><b>Session Chair: Scott Rennekar,</b><br>University of British Columbia<br>Room 301  | <b>Session 16: CNM From Structured Materials/CNM Characterization for Safer by Design</b><br><b>Session Chair: Jo Anne Shatkin,</b><br>Vireo Advisors, LLC<br>Room 201A     | <b>Session 17: Fundamental Mechanisms</b><br><b>Session Chair: Wim Thielemans,</b><br>KU Leuven<br>Room 201B  |
| 13:32         | Application of Hydrophobically Modified CNF/Resin Masterbatch "STARCEL®" to Foamed Materials – <b>Shuichi Ohira,</b> SEIKO PMC Corporation  | Analysis of the Properties of Anisotropic Foams as a Tool for Characterizing the Fibrillation Degree of CNFs – <b>Nathalie Lavoine,</b> North Carolina State University     | Impact of Nanocellulose on the Mechanics and Microstructure of Pectin Hydrogels – <b>Patricia Lopez-Sanchez,</b> RISE, Research Institutes of Sweden                                    |
| 13:54         | Cellulose Filaments (CF) for Light-Weight Composites and High Performance Concretes – <b>Balázs Tolnai,</b> Kruger Inc.   | R2R Spray Deposition of CNF Thin Films Studied Real-Time Using Surface Sensitive Scattering Methods – <b>Calvin Brett,</b> KTH Royal Institute of                           | Metal Coordination Reinforced Polyacrylamide-Based Physical Hydrogels Compositated With Carboxylated Cellulose  |

|                     |  |   |  |
|---------------------|--|---|--|
|                     |  | <i>Technology &amp; DESY Deutsches Elektronen-Synchrotron</i>   | Derivatives – <b>Jianquan Wang</b> , <i>Beijing Institute of Technology</i>  |
| <b>14:16</b>        | Optimizing Various Aspects of Nanocellulose Film Forming on Steel Substrate for Drying Studies – <b>Vinay Kumar</b> , <i>VTT Technical Research Centre of Finland Ltd.</i> | Implementation of Safe-by-Design Thinking into Manufacturing and Use of Products Containing Nanomaterials - <b>Heli Kangas</b> , <i>VTT Technical Research Centre of Finland Ltd.</i>               | Chitosan Nanofiber-Catalyzed Selective Knoevenagel Condensation Under Green Conditions – <b>Yusaku Hirayama</b> , <i>Kyushu University</i>       |
| <b>14:38</b>        | Structure and Functionalities of CNF Nonwoven Sheet – <b>Keisuke Jono</b> , <i>Asahi Kasei Corporation</i>   | Update on the Environmental Health and Safety of CNMs – <b>James Ede</b> , <i>Vireo Advisors, LLC</i>   | Nanocellulose Aerogels for CO <sub>2</sub> Capturing and Conducting Strain Sensors - <b>You-Lo Hsieh</b> , <i>University of California-Davis</i> |
| <b>15:00-15:30</b>  | <b>Break</b><br><i>Convention Hall B</i>   |   |  |
| <b>15:30 -17:00</b> | <b>Session 18: End User Panel</b><br><b>Session Chair: Hamdy Khalil</b> , <i>Woodbridge Foam Corporation Room 301</i>  | <b>Session 19: Methods in Safety Evaluation of CNM</b><br><b>Session Chair: Heli Kangas</b> , <i>VTT Technical Research of Finland Ltd. Room 201A</i>   | <b>Session 20: Photonics</b><br><b>Session Chair: Wadood Hamad</b> , <i>FPIInnovations Room 201B</i>   |
| <b>15:32</b>        | <b>Panelists:</b><br><b>Kazuhito Jinno</b> , <i>DKS Co. Ltd.</i><br><b>Junji Nemoto</b> <i>Hokuetsu Corporation</i><br><b>Hiroki Matsuo</b> , <i>RBP Co.</i>               | Development of Safety Assessment Methods for CNF – <b>Hiedo Kajihara</b> , <i>National Institute of Advanced Industrial Science and Technology/Research Institute of Safety and Sustainability</i>  | Photonic CNC Films for Optoelectronic Devices – <b>Paul Grey</b> , <i>CENIMAT/i3N</i>  |
| <b>15:54</b>        |  | An Alternative Testing Strategy for Demonstrating the Safety of CNMs – <b>Jo Anne Shatkin</b> , <i>Vireo Advisors, LLC</i>  | Fabrication and Regulation of Colorimetric Humidity-Sensitive CNC Films – <b>Guomin Zhao</b> , <i>Nanjing Forestry University</i>                |
| <b>16:16</b>        |  | Assessing Bioavailability and Bioperformance of Ingested CNFs Using a Novel Physiologically-Relevant Ex Vivo and in Vitro Integrated Methodology – <b>Christie Sayes</b> , <i>Baylor University</i> | Chioptical and Plasmonic Films via Electrochemical Deposition – <b>Wadood Hamad</b> , <i>FPIInnovations</i>                                      |
| <b>16:38</b>        |  | In Vivo Testing Approach to Demonstrate the Safety of CNMs in Food– <b>Kimberly Ong</b> , <i>Vireo Advisors, LLC</i>  | Control of the Colloidal Deposition of CNC Films – <b>Wim Thielemans</b> , <i>KU Leuven</i>  |
| <b>18:30-20:30</b>  | <b>Conference Dinner &amp; Awards Ceremony</b><br>(additional registration fee required)<br><i>Hotel The Manhattan</i>   |   |  |

**Thursday  
6 June 2019**

|                     |  |   |   |  |
|---------------------|--|---|---|--|
| <b>8:30 – 10:00</b> | <b>Session 21: Use of CNMs for Paper and Paperboard Packaging Application</b><br><b>Session Chair: Nathalie Lavoine</b> , North Carolina State University<br>Room 301B | <b>Session 22: New and Emerging Applications</b><br><b>Session Chair: Keith Gourlay</b> , Performance BioFilaments<br>Room 301A   | <b>Session 23: Printing CNMs for Biomedical Applications</b><br><b>Session Chair: Gilberto Siqueira</b> , EMPA<br>Room 201A           | <b>Session 24: Non-Traditional Methods for Nano-Lignocellulose Extraction</b><br><b>Session Chair: Sean McAlpine</b> , Blue Goose Biorefineries Inc.<br>Room 201B    |
| <b>8:32</b>         | Wet Lamination of MFC on Board – <b>David Guerin</b> , Centre Technique du Papier  | Overview and Progress of the Nano Cellulose Vehicle (NCV) Project – <b>Naoki Obi</b> , Kyoto University   | Bagasse - A Resource for Fibres and Nanocelluloses for Biocomposites and 3D Printing – <b>Gary Chinga Carrasco</b> , RISE PFI         | Isolation of Nanocellulose From Biomass via Nontraditional Routes – <b>Feng Jiang</b> , The University of British Columbia   |
| <b>8:54</b>         | Benefits of Microfibrillated Cellulose in Paperboard - <b>Jonathan Phipps</b> , FiberLean Technologies   | Ionic Polymer Metal Composites for Sensing and Actuation Produced with Cellulose Nanofibrils – <b>Mehdi Tajvidi</b> , University of Maine   | Fabrication of Nanocellulose/PEGDA Hydrogel and Aerogel by Stereolithography – <b>Dong Sun</b> , South China University of Technology | Characterization of Cellulose Nanofibers Prepared From Spent Coffee Grounds – <b>Noriko Kanai</b> , Yokohama National University                                     |
| <b>9:16</b>         | Nanocellulose: Packaging Applications and Commercial Development – <b>Jack Miller</b> , Biobased Markets   | Novel Double-Networked Cellulose Based Shape Memory Polymer Composites – <b>Chenyang Cai</b> , Nanjing Forestry University  | 3D Printing of Nanocellulose Scaffold as Culture Platform and Tissue Mimics – <b>Xiaoju Wang</b> , Åbo Akademi University             | Preparation of Carboxymethyl Nanocellulose Fibers with Tree-like Structure Using a Recyclable Etherification – <b>Ziqiang Shao</b> , Beijing Institute of Technology |
| <b>9:38</b>         | Preparation of Packaging Paper with High Barrier Properties Through CNF Coating - <b>Hye Jung Youn</b> , Seoul National University                                     | Mechanically Adaptive Nanocomposites with CNCs: Strain-Field Mapping with Digital Image Correlation – <b>Chunxiang Ding</b> , College of Materials Science and Engineering, Nanjing Forestry University | Biomimetic Inks Based on Hemicellulose and Nanocellulose for 3D Printing – <b>Wenyang Xu</b> , Åbo Akademi University                 | Continuous Production of Cellulose Nanocrystals in a Microfluidic Reactor Systems: An Industrial Viable Approach – <b>Prodyut Dhar</b> , Kyoto University            |
| <b>10:00 -10:30</b> | <b>Break</b><br>Convention Hall B  |   |   |  |

|              |  |   |   |  |
|--------------|--|---|---|--|
| 10:30 -12:00 | <p><b>Session 25: Lignin and Hemicelluloses Nanoparticles and Applications</b><br/> <b>Session Chair: Nathalie Lavoine, North Carolina State University</b><br/> Room 301B</p> | <p><b>Session 26: Production and Characterization of Modified CNFs</b><br/> <b>Session Chair: David Skuse, FiberLean Technologies Limited</b><br/> Room 301A</p>    | <p><b>Session 27: CNM for Biomedical Applications</b><br/> <b>Session Chair: Gary Chinga-Carrasco, PFI</b><br/> RISE<br/> Room 201A</p>   | <p><b>Session 28: Towards Non-Traditional Markets</b><br/> <b>Session Chair: Emily Cranston, University of British Columbia</b><br/> Room 201B</p>             |
| 10:32        | <p>Developing Nanomaterials from Xylan: Single Crystal Nanotiles – <b>Scott Renneckar, University of British Columbia</b></p>  | <p>Preparation and Characterization of the Surface-Sulfated CNF – <b>Lianzhen Lin, KRI, Inc.</b></p>  | <p>Functionalization-Dependent Effects of Nanocellulose on Immuno-Modulatory Properties - <b>Vanja Kokol, University of Maribor</b></p>   | <p>Priorities for Development of Standards Test Methods to Support the Commercialization of CNMs – <b>Colleen Walker, University of Maine</b></p>              |
| 10:54        | <p>Lignin Nanoparticles as a High-Value Material Platform for Functional Nanocomposites – <b>Dong Tian, Sichuan Agricultural University</b></p>                                | <p>Modified Fenton Oxidation of Cellulose Fibres for CNF Preparation – <b>Qun Li, Tianjin University of Science and Technology</b></p>                              | <p>Fibroblast Cell Culture on Extracellular Matrix-Mimetic Scaffolds Composed of Surface-Carboxylated Nanocellulose - <b>Mayumi Hatakeyama, Kyushu University</b></p>           | <p>Labeled Cellulose Nanofibrils for EHS Studies – <b>Douglas Fox, American University</b></p>   |
| 11:16        | <p>Conductive Carbon Microfibers Derived from Lignin-Nanocellulose Hydrogels - <b>Ling Wang, Aalto University</b></p>  | <p>Relationships Between the Structures and Properties of Acid-Free TEMPO-Oxidized Cellulose Nanocrystals (TEMPO-CNCs) – <b>Yaxin Zhou, University of Tokyo</b></p> | <p><i>See Conference App</i></p>  | <p>Factors Affecting CNC Organogel Formation and Their Effects on Pharmaceutical Crystallization – <b>Manali Banerjee, Georgia Institute of Technology</b></p> |
| 11:38        | <p>Integrated Production of Nanomaterials and Cellulosic Ethanol Form Sugarcane Bagasse - <b>Valdeir Arantes, University of São Paulo</b></p>                                  | <p>Characterization of Phosphorylated CNF Dispersion and its Applications – <b>Yuichi Noguchi, Oji Holdings Corporation</b></p>                                     | <p>Stereolithographic Printing of Nanocellulose/ PEGDA Scaffolds With Tunable Poisson's Ratio and Its Application - <b>Aimin Tang, South China University of Technology</b></p> | <p>Hybrid Materials of Nanocellulose and Graphene – <b>Tiffany Abitbol, RISE, Research Institutes of Sweden</b></p>  |



|               |  |   |  |  |
|---------------|--|---|--|--|
| 12:00-13:30   | <p style="text-align: center;"><b>Session 29: Lunch with presentation</b><br/> <b>Sponsored by: Aalto University &amp; VTT Technical Research Centre of Finland Ltd.</b><br/> <b>Session Chair: Nathalie Lavoine, North Carolina State University</b></p> <p style="text-align: center;"><b>Renewable Nanomaterial Developments in the Boreal Forest Belt</b><br/> <b>Orlando Rojas, Aalto University; Heli Kangas, VTT Technical Research Centre of Finland Ltd. and Gilberto Siqueira, EMPA - 2020 Nano Conference Co-chairs</b></p> <p style="text-align: center;"><i>Conventional Hall A&amp;B</i></p> |   |  |  |
| 13:30 - 15:00 | <p><b>Session 30: Commodity &amp; Engineering Plastic Composites</b><br/> <b>Session Chair: Douglas Fox, American University Room 301B</b></p>   | <p><b>Session 31: Energy Storage</b><br/> <b>Session Chair: Katariina Torvinen, VTT Technical Research Centre of Finland Ltd. Room 301A</b></p>   | <p><b>Session 32: End Functionalized CNMs and New Self-Assembled Architectures</b><br/> <b>Session Chair: Tiffany Abitbol, RISE, Research Institutes of Sweden Room 201A</b></p> | <p><b>Session 33: New Pathways for Nanocellulose Composites</b><br/> <b>Session Chair: Darren Martin, University of Queensland Room 201B</b></p>         |
| 13:32         | <p>Creating Filled Nanocomposites from Industrially Relevant Polymers – <b>Johan Foster, Virginia Tech</b></p>   | <p>Processability of Nanographite-Nanocellulose Based Electrodes for Flexible Energy Storage Applications – <b>Rajesh Koppolu, Åbo Akademi University</b></p>   | <p>Towards Symmetrically and Asymmetrically Functionalised CNCs – <b>Gwendoline Delepierre, Adolphe Merkle Institute - University of Fribourg</b></p>                            | <p>Highly Thermally Stable Transparent Nanocomposites of Immiscible Polymer and Nanocelluloses – <b>Subir Kumar Biswas, Kyoto University</b></p>         |
| 13:54         | <p>Synthesis of Nylon 66 Composites Containing Natural Organic Nanomaterials – <b>Lam Tan Hao, Korea Research Institute of Chemical Technology (KRICT)</b></p>   | <p>CNFs for Flexible Power Sources - <b>Sand-Young Lee, UNIST</b></p>   | <p>Unconventional CNC Derivatives – <b>Johanna Majoinen, Aalto University</b></p>  | <p>Developing Polyamide/Cellulose Nanocomposites for Industrial-Scale Processing – <b>Priya Venkatraman, Virginia Tech</b></p>                           |
| 14:16         | <p>Electrospinning and Fiber Stretching of Polymer-Grafted CNC Polystyrene Nanocomposites: Structures and Dynamic Mechanical Properties – <b>Yaman Boluk, University of Alberta</b></p>  | <p>Electrochemical Properties of Cellulosic Separators for Lithium-ion Batteries Prepared by TEMPO-oxidized and High-Pressure Homogenized Cellulose Micro-nano-fibers – <b>Weigui Xie, South China University of Technology</b></p> | <p>New Assemblies Based on Asymmetrically-Functionalized CNCs – <b>Bruno Jean, CERMAV-CNRS</b></p>   | <p>Zero-VOC Waterborne Acrylic Coatings: Improving Properties with Cellulose Nanocrystals – <b>Ezgi Dogan-Guner, Georgia Institute of Technology</b></p> |
| 14:38         | <p>Process Design Due to Nano-Fusion for Reinforced Nanocomposites by Embedding Nanocellulose Honeycomb Frames – <b>Tetsuo Kondo, Kyushu University</b></p>  | <p>Highly Porous Willow-Derived Activated Carbon for High Performance Supercapacitor Electrodes – <b>Josphat Phiri, Aalto University</b></p>  | <p>Arrangement of CNCs into 2D Cellular Networks with Tunable Dimensions – <b>Eero Kontturi, Aalto University</b></p>  | <p>Emulsion-Templated Synthesis of Nanocellulose-Shelled Microparticles – <b>Shuji Fujisawa, University of Tokyo</b></p>                                 |

|                                     |  |  |   |  |
|-------------------------------------|--|--|---|--|
| 15:00-15:30                         | <b>Break</b><br>Convention Hall B  |  |   |  |
| 15:30 – 17:00                       | <b>Session 34: Additive Manufacturing</b><br><b>Session Chair: Tanja Zimmerman, EMPA</b><br>Room 301B  | <b>Session 35: CNM Composites and Surface Modification</b><br><b>Session Chair: Jimmy Jong, FPInnovations</b><br>Room 301A   | <b>Session 36: Advances and Insights into CNC Self-Assembly Upon Drying</b><br><b>Session Chair: Bruno Jean, CERMAV-CNRS</b><br>Room 201A | <b>Session 37: Papers and Beyond</b><br><b>Session Chair: Warren Batchelor, Monash University</b><br>Room 201B   |
| 15:32                               | Effect of Viscoelastic Properties on 3D Printability of CNF Hydrogels – <b>Jinho Hyun, Seoul National University</b>                               | Thiol-Ene Modifications to Alter CNF Film Properties – <b>Kendra Fein, University of Maine</b>   | Recent Advances in Vacuum Assisted Self-Assembly of CNCs - <b>Jianming Zhang, Qingdao University of Science and Technology</b>            | Structures and Applications in Fluorescent Paper of Cellulose Derivatives/Eu(Tb) Nanocomplexes – <b>Jun Ye, South China University of Technology</b>                     |
| 15:54                               | Assessment of Mechanical Properties and Fiber Alignment of Additively Manufactured CNF Materials – <b>Kevin Turner, University of Pennsylvania</b> | Controlling Formation and Properties of Cellulose Nano-Paper Using Polyvinylpyrrolidone/ Laponite Nanoparticle System – <b>Guodong Li, Qilu University of Technology</b> | Nanoparticle Alignment in Drying CNC Droplets – <b>Michael Bortner, Virginia Tech</b>   | Cellulose Nanofibril (CNF) Based Gel Polymer as a Solid State Electrolyte for Lithium Ion Battery (LIB) – <b>Hao Zhang, Tianjin University of Science and Technology</b> |
| 16:16                               | Monocomponent Nanocellulose for Biobased 3D Printing - <b>Rubina Ajdary, Aalto University</b>  | CNC-based Glass Fiber Sizing for Composite Reinforcement – <b>Ejaz Haque, Georgia Institute of Technology</b>  | Controlling the Deposition Pattern of CNCs in Drying Droplets Using Internal Flow Fields – <b>Wim Thieleman, KU Leuven</b>                | Inverse Thermoreversible Methylcellulose/Cellulose Nanocrystal Nanocomposite Hydrogel for Fiber Spinning – <b>Ville Hynninen, Aalto University</b>                       |
| 16:38                               | Stretchable and Conductive Nanocellulose Composites – <b>Gilberto Siqueira, EMPA</b>   | TEMPO-CNF Epoxy Hybrids for Nanopapers with Improved Wet Strength - <b>Florian Mayer, University of Vienna</b>   | Self-Assembly of CNCs Around Complex Contours – <b>Konrad Klockars, Aalto University</b>  | Nano-Cellulose Enhanced Dialdehyde Carboxymethylcellulose Dual Responsive Self-Repairing Hydrogel – <b>Shiyu Fu, South China University of Technology</b>                |
| 17:00 – 18:30                       | <b>2019 Nano Conference Wrap Up Meeting (invitation only)</b><br>Room 201A   |  |   |  |
| <b>Friday</b><br><b>7 June 2019</b> |  |  |   |  |
| 8:00 – 19:00                        | <b>Traditional Japanese Paper Mill, Honda Plant, and Hodosan Shrine Tours</b>  |  |   |  |