

# 2017 TAPPI International Conference on Nanotechnology for Renewable Nanomaterials

## 5-8 June 2016 – Montreal, Canada

### 2017 CALL FOR PRESENTATIONS

The co-chairs for the 2017 conference invite submissions for oral and poster presentations. TAPPI's Nano event continues to grow in attendance and quality of presentations. Please consider submitting an abstract to this premier event addressing the latest technical developments and applications of renewable nanomaterials. While heavily focused on cellulose nanomaterials, submissions regarding other nano bio-based materials are highly encouraged.

#### PRESENTATION TOPICS

<b>Characterization, Metrology and Critical Fundamentals</b>
<p><b>Fundamental Property Measurements</b></p> <ul style="list-style-type: none"> <li>• Measurement of cellulose nanomaterials intrinsic properties, such as surface chemistry, modulus, optical, thermal, mechanical or other physical properties</li> <li>• New metrology methods</li> </ul> <p><b>Metrology for CNF/CNC Production</b></p> <ul style="list-style-type: none"> <li>• Methods for in-line measurement or those that increase production efficiency</li> <li>• Quantitative property control in CNF/CNC production and post-processing</li> <li>• Producing CNF directly from wood chips</li> </ul>
<p><b>Surface-Mediated Assembly</b> The utilization of the assembly of nanocellulose in novel advanced multifunctional materials design</p>
<p><b>Colloidal Interactions</b></p> <ul style="list-style-type: none"> <li>• Colloidal interactions guiding the assembly process</li> </ul> <p><b>Surface Modification</b></p> <ul style="list-style-type: none"> <li>• Surface modifications tuning the assembly behavior</li> </ul> <p><b>Directed Assembly</b></p> <ul style="list-style-type: none"> <li>• Assembly under external manipulation</li> </ul>
<p><b>Composite Processing and Testing</b> Aspects of the preparation, characterization, and application of cellulose nanomaterials in composite materials.</p>
<p><b>Modification Methods</b></p> <ul style="list-style-type: none"> <li>• Chemical modification of nanocellulose, lignin, and other renewables to alter their surface interactions for composite applications</li> </ul> <p><b>Drying Methods</b></p> <ul style="list-style-type: none"> <li>• Techniques of dewatering and drying nanocellulose to improve subsequent re-dispersion</li> </ul> <p><b>Processing Methods</b></p> <ul style="list-style-type: none"> <li>• De-aggregation and dispersion of dried or wet materials into a matrix</li> </ul> <p><b>Characterization Methods</b></p> <ul style="list-style-type: none"> <li>• Novel methods to characterize composites</li> </ul> <p><b>Surface &amp; Interfacial Interactions</b></p> <ul style="list-style-type: none"> <li>• Examination of interactions at interfaces</li> </ul>

**Infrastructure and Transportation Applications**

- Weight reduction, reinforcement, cement/epoxy curing catalysis

**New and emerging applications in nanocellulose composites**

- 3D printing, filters, binding matrices for oil and metal contaminants

**Paper and Packaging****Nanocellulose Self-Standing Films**

- Fundamental studies on film structure/morphology: structure/properties/process relationships; porosity characterization/measurement; entanglement characterization or control via different processing
- New application and innovative properties of nanocellulose films and multilayers (e.g. electrical properties; membranes as filtration system; responsive properties)

**Active and Intelligent Packaging**

- Design, processing, and characterization of fiber-based active and intelligent packaging using nanocellulose (one target sector is food, but others like medical sector are also welcome); interests in scale-up and commercialization
- Controlled release packaging versus contact/leaching packaging; “new generation” of active packaging (e.g., antibacterial properties); responsive food packaging
- Legislation updates/or comparison between countries related to active and intelligent packaging: links between research/industry/market

**Nanocellulose for Pulp and Paper Industry**

- Studies related to industrial applications: benefits of using nanocellulose in the pulp, for paper or board production; market/cost studies for direct use and applications
- Comparison between CNF, CNC, and BNC for paper-based applications
- Effect of nanocellulose addition on the papermaking process and final product performance

**Nanocellulose-Based Coatings**

- Effect of nanocellulose addition on coating slurry rheology and performance
- Spray coating of nanocellulose layers
- Characterization methods, interactions between nanocellulose and other additional fillers or polymeric matrix

**Functional Materials and Soft Matter****Emulsions**

- Fundamental and applied work covering the use of nanocellulose and other polysaccharides as stabilizing agents in Pickering emulsions

**Gels**

- Novel development of gel formation and analysis using nanocellulose and other polysaccharides

**Mechanisms and Fundamentals**

- Structure-property-process relationships to unravel and explain basic mechanisms in gels and emulsions

**Responsive Materials and Composites**

- Synthesis, processing and application development of nanocellulose and polysaccharide based stimuli-responsive materials and multifunctional composites

**Foams & Aerogels**

- Formation, modification, and applications of foams and aerogels

**Biomedical Applications****Wound Dressings**

- Design and performance of nanocellulose-based wound dressings (hydrogels / bandages)

**Tissue engineering**

- Preparation of nanocellulose-based scaffolds, scaffolds’ physical / chemical properties and cell / tissue -scaffold interactions

**Drug Delivery**

- Nanocellulose-based drug delivery systems

**Biomedical Implants**

- Nanocellulose-based materials for use in medical implants

<p><b>Electronic Materials, Optical Materials and Catalysts/Templating</b> The application of nanocellulose for fuel cells, batteries, supercapacitors, photovoltaics, etc.</p>
<p><b>Nanocellulose-Based Electronics and Energy Storage</b></p> <ul style="list-style-type: none"> <li>• Development, characterization and modeling of new materials for application in flexible electronics, batteries, photovoltaics, etc.</li> </ul> <p><b>Organic/Inorganic Hybrids</b></p> <ul style="list-style-type: none"> <li>• Novel development and application of nanocellulose-based multifunctional composites and templated materials</li> </ul> <p><b>Photonics</b></p> <ul style="list-style-type: none"> <li>• Applications of CNC-based chiral nematic photonic structures and new CNC hybrid materials for photonic properties</li> </ul>
<p><b>Environment, Health &amp; Safety</b></p> <p><b>Occupational Exposure</b></p> <ul style="list-style-type: none"> <li>• Measurements, tools, methods and studies toward assessing and managing workplace exposures</li> </ul> <p><b>Safety in Applications</b></p> <ul style="list-style-type: none"> <li>• Safety of products containing nanomaterials</li> </ul> <p><b>Characterization for Safety Assessments</b></p> <ul style="list-style-type: none"> <li>• Physical and chemical characterization methods and studies related to toxicology</li> </ul> <p><b>Life Cycle Analysis</b></p> <ul style="list-style-type: none"> <li>• Sustainability and other benefits/impact analysis</li> </ul>
<p><b>Industrial Production of Renewable Nanomaterials</b></p>

## CONFERENCE CO CHAIRS

Jean Bouchard – FPIInnovations  
Emily Cranston – McMaster University  
Derek Gray – McGill University  
Tom Lindstrom – KTH/Innventia

## STUDENT OPPORTUNITIES

### Student Travel Awards

Abstracts submitted by students for oral presentations and posters will be reviewed and evaluated by a group appointed by the Technical Program Committee. Selected submissions will be awarded grants to cover partial travel expenses, as well as offer discounted conference registration fees.

### Student Poster Competition

All accepted posters will be evaluated at the conference by a team of judges. The poster winners will be recognized at the conference, and the top poster presenters awarded a prize.

## ABSTRACT SUBMITTALS

Submissions are due by **31 December 2016**. Submissions must be received by the stated deadline to be considered for acceptance. Due to the large number of submissions received, the organizers cannot guarantee that the submission will be accepted.

All submissions will be peer reviewed by the conference Co-Chairs and Nano Division Research Subcommittees for acceptance. Submit title and 300-word or shorter abstracts via TAPPI's Speaker Management System. [Click here](#) to create a log in and submit an abstract.

## IMPORTANT DATES

**Abstract Due – 31 December 2016**  
**Notification of Acceptance – 27 February 2017**  
**Final PowerPoint Due to TAPPI – 29 May 2017**

## REGISTRATION INFORMATION

Speakers must register by **1 May 2017** to confirm inclusion in the technical program. If speakers are not registered by this date, their presentation will be pulled from the program. A reduced conference rate is available for speakers.

Visit the [conference website](#) for more information.

## Questions?

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Submission Issues: Jessica Reaves, [jreaves@tappi.org](mailto:jreaves@tappi.org), +1-404-509-7477