



## 2018 TAPPI International Conference on Nanotechnology for Renewable Nanomaterials

June 11-14, 2018 – Madison, Wisconsin

### 2018 CALL FOR PRESENTATIONS

The co-chairs for the 2018 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.

#### INDUSTRIAL PRODUCTION AND USE

*Presentations must include technical advancements in the production and use of renewable nanomaterials.*

##### Industrial and Pilot Scale Production

- Updates from producers of renewable nanomaterials on new methods, products and/or applications

##### Industrial Applications/End Uses

- Field trials, pilot trials or laboratory testing in industrial applications

#### TECHNICAL PRESENTATIONS ON NEW RESEARCH FINDINGS

*Topics where novel research and new findings are presented are preferred. Literature reviews are not encouraged.*

***Please see the detailed list on the following pages.***

#### Co-located with



The FPS Annual Convention focuses on the latest technical advances in wood use in buildings, furniture and lumber. Joint sessions will be held with TAPPI Nano 2018.

Topics of interest include:

- Wood adhesives or protective coatings using nanomaterials
- Nanofibers for wood-based composites

For more information and to submit an abstract visit <http://www.forestprod.org/ic/>.

#### ***Special Topics for for 2018***

The organizers of this year's conference are requesting abstract submissions in two focus areas:

##### **Automotive & Other Manufacturing Processing**

Abstracts focusing on the use of cellulose nanomaterials for lightweighted materials, laminates, sheet molding compound, foamed parts, and pre-pregs for use in automotive manufacturing.

##### **Ligno- and Hemi-Nanocellulose Materials**

Abstracts that explore the use of lignin or/and hemicelluloses in combination with nanocellulose materials. Topics focusing on ligno-nanocellulose processing, materials properties characterization/modeling, or functional applications highlighting the added-value of lignin/ hemicelluloses are welcome.

<b>Characterization and Metrology from the Lab to Production Plant</b>
<p><b>Fundamental CNM Property Measurements</b></p> <ul style="list-style-type: none"> <li>• New metrology methods</li> <li>• Measurement of cellulose nanomaterials' intrinsic properties (surface chemistry, optical, thermal, mechanical, other chemical or physical properties)</li> <li>• Key properties for comparison and benchmarking of cellulose nanomaterials</li> </ul> <p><b>Metrology for CNF/CNC Production</b></p> <ul style="list-style-type: none"> <li>• New metrology methods</li> <li>• Commercial measurement needs (in-line, quantitative property control)</li> <li>• Comparison and benchmarking tools</li> </ul> <p><b>Matching CNM Properties to Applications</b></p> <ul style="list-style-type: none"> <li>• Materials specifications, spec sheets and regulations – are new standard characterization methods needed?</li> <li>• Evaluation of existing characterization methods' usefulness and practicality</li> </ul>
<b>Mediated Assembly</b>
<p><b>Colloidal Interactions &amp; surface modification</b></p> <ul style="list-style-type: none"> <li>• Colloidal interactions &amp; surface modifications guiding the assembly process</li> </ul> <p><b>Self-assembly in hybrid materials</b></p> <ul style="list-style-type: none"> <li>• Co-assembly in nanocomposite and hybrid materials</li> </ul> <p><b>Directed Assembly</b></p> <ul style="list-style-type: none"> <li>• Assembly under external manipulation</li> </ul>
<b>Composite Processing and Testing</b>
<p><b>Surface and interfacial interactions</b></p> <ul style="list-style-type: none"> <li>• Surface modification, adsorption, surfactants, coatings, water sorption, adhesion</li> </ul> <p><b>Composites Processing</b></p> <ul style="list-style-type: none"> <li>• dewatering, drying, redispersion, de-aggregation, in-situ polymerization, extrusion, injection molding, fusion, cured composites, additive manufacturing</li> </ul> <p><b>New, emerging, and remarkable applications and compositions</b></p> <ul style="list-style-type: none"> <li>• infrastructure, fire retardancy, water purification</li> </ul>
<b>Paper and Packaging</b>
<p><b>Nanocellulose Self-Standing Films</b></p> <ul style="list-style-type: none"> <li>• Fundamental studies on film structure/morphology: structure/properties/process relationships; porosity characterization/measurement; entanglement characterization or control via different processing</li> <li>• New application and innovative properties of nanocellulose films and multilayers (e.g. electrical properties; membranes as filtration system; responsive properties)</li> </ul> <p><b>Active and Intelligent Packaging</b></p> <ul style="list-style-type: none"> <li>• 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</li> <li>• Controlled release packaging versus contact/leaching packaging; “new generation” of active packaging (e.g., antibacterial properties); responsive food packaging</li> <li>• Legislation updates/or comparison between countries related to active and intelligent packaging: links between research/industry/market</li> </ul> <p><b>Nanocellulose for Pulp and Paper Industry</b></p> <ul style="list-style-type: none"> <li>• 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</li> <li>• Comparison between CNF, CNC, and BNC for paper-based applications</li> <li>• Effect of nanocellulose addition on the papermaking process and final product performance</li> </ul> <p><b>Nanocellulose-Based Coatings</b></p> <ul style="list-style-type: none"> <li>• Effect of nanocellulose addition on coating slurry rheology and performance</li> <li>• Spray coating of nanocellulose layers</li> <li>• Characterization methods, interactions between nanocellulose and other additional fillers or polymeric matrix</li> </ul>

<p><b>Functional Materials and Soft Matter</b></p> <p><b>Mechanisms and Fundamentals</b></p> <ul style="list-style-type: none"> <li>• Structure-property-process relationships to unravel and explain basic mechanisms in gels, foams and emulsions</li> </ul> <p><b>Emulsions, Foams and gels</b></p> <ul style="list-style-type: none"> <li>• Fundamental and applied work covering the use of nanocellulose and other polysaccharides as stabilizing agents in Pickering emulsions, gels, aerogels and foams.</li> </ul> <p><b>Responsive Materials and Composites</b></p> <ul style="list-style-type: none"> <li>• Synthesis, processing and application development of nanocellulose and polysaccharide based stimuli-responsive materials and multifunctional composites</li> </ul>
<p><b>Biomedical Applications</b></p> <p><b>Wound Dressings</b></p> <ul style="list-style-type: none"> <li>• Design and performance of nanocellulose-based wound dressings (hydrogels / bandages)</li> </ul> <p><b>Tissue engineering and implants</b></p> <ul style="list-style-type: none"> <li>• Preparation of nanocellulose-based scaffolds, scaffolds' physical / chemical properties and cell / tissue -scaffold interactions</li> <li>• Nanocellulose-based materials for use in medical implants</li> </ul> <p><b>Drug Delivery</b></p> <ul style="list-style-type: none"> <li>• Nanocellulose-based drug delivery systems</li> </ul>
<p><b>Nanocellulose Electronics, Photonics and Energy Technologies</b></p> <p><b>Nanocellulose-Based Flexible/Bio Electronics</b></p> <ul style="list-style-type: none"> <li>• Development, characterization and modeling of new materials for application in flexible electronics, wearable technologies, textile electronics..</li> </ul> <p><b>Energy devices</b></p> <ul style="list-style-type: none"> <li>• Novel developments and application of nanocellulose multifunctional films and nanocomposite structures for supercapacitors, batteries, catalysts and others</li> <li>• Novel developments in the use of nanocellulose to improve efficiency in photovoltaics and solar-thermal technologies</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> <li>• Transparent substrates, photovoltaics, light responsive structures, solar-thermal technologies</li> </ul>
<p><b>Product Stewardship and Safety</b></p> <p><b>Occupational exposure and risk assessment</b></p> <ul style="list-style-type: none"> <li>• Contributions about methods, data and analysis regarding occupational environment.</li> </ul> <p><b>Safety in applications</b></p> <ul style="list-style-type: none"> <li>• Presentations addressing product safety across the value chain.</li> </ul> <p><b>Life cycle analysis</b></p> <ul style="list-style-type: none"> <li>• Contributions welcome on any aspect of Life cycle impacts from nanomaterials or nanoenabled products, from cradle to gate or cradle to cradle.</li> </ul>

## CONFERENCE CO CHAIRS

Alan Rudie, USDA Forest Products Laboratory

Satoshi Hirata, National Institute of Advanced Industrial Science and Technology

Maria Soledad Peresin, Auburn University

## 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 **1 December 2017**. 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

**1 December 2017 – Abstracts due**

**27 February 2018 – Acceptance letters sent to authors**

## REGISTRATION INFORMATION

Speakers must register by **1 May 2018** 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