



3-7 June 2019 – Chiba, Japan

2019 CALL FOR PRESENTATIONS

The co-chairs for the 2019 NANO 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 primarily 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:

[Nanocellulose Exhibition in TAPPI Nano](#)

4-5 June 2019



Nanocellulose Forum

Organized by AIST



NATIONAL INSTITUTE OF
ADVANCED INDUSTRIAL SCIENCE AND TECHNOLOGY (AIST)

Special Topics for 2019

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

Automotive & Other Manufacturing Processing

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

Additive Manufacturing

Abstracts focusing on 3D printing, rapid prototyping, and layered manufacturing of nanocellulose-containing materials for prototyping, sensing, tissue scaffolding, electronics, and other technologies.

Lignin and Hemicellulose Nanomaterials

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.

Characterization and Metrology from the Lab to Production Plant

Fundamental CNM Property Measurements

- Measurement of cellulose nanomaterials' intrinsic properties (surface chemistry, optical, thermal, mechanical, other chemical or physical properties)
- Key properties for comparison and benchmarking of cellulose nanomaterials

Metrology for CNF/CNC Production

- New metrology methods
- Commercial measurement needs (in-line, quantitative property control)
- Comparison and benchmarking tools

Matching CNM Properties to Applications

- Materials specifications, spec sheets, regulations and new standard characterization methods
- Evaluation of existing characterization methods' usefulness and practicality

Mediated Assembly

Colloidal Interactions & Surface Modification

- Colloidal interactions & surface modifications guiding the assembly process

Self-assembly in Hybrid Materials

- Co-assembly in nanocomposite and hybrid materials

Directed Assembly

- Assembly under external manipulation
- Confinement or processing driven ordering

Composite Processing and Testing

Surface and Interfacial Interactions

- Surface modification, adsorption, surfactants, coatings, water sorption, adhesion

Composites Processing

- Dewatering, drying, redispersion, de-aggregation, in-situ polymerization, extrusion, injection molding, fusion, cured composites, additive manufacturing

New, Emerging, and Remarkable Applications and Compositions

- Infrastructure, fire retardancy, water purification

Paper and Packaging

Self-Standing Films and Multilayers from Biomass for Packaging Applications

- Structure/properties/processing relationships: functional films and multilayers
- Use of nanocellulose in plastic packaging

Active and Intelligent Fiber-Based Packaging

- Fiber-based active and intelligent packaging using nanoparticles/nanocellulose from biomass; interests in scale-up; responsive packaging; controlled release vs leaching packaging
- Nanocellulose in food-related products

Renewable Nanoparticles/Nanocellulose for Pulp and Paper Industry

- Industrial applications e.g. addition of nanocellulose in the pulp stock (drainage study, in-line production of nanocellulose), use of renewable nanoparticles for all-grade paper/paperboard production (e.g. OCC, tissue paper.); market/cost studies for direct use and applications
- Relationship between nanoparticles dimension, surface chemistry and performance in pulp and paper applications

Renewable Nanoparticles/Nanocellulose-Based Coatings

- Nanocellulose coating process (spray, blade, curtain, roll to roll,..) and formulation characterization (rheology, dispersion)
- Surface and barrier properties of coated substrates
- Coating Applications: paper/paperboard substrates with enhanced properties, edible coating for food, printing process and properties

<p>Functional Materials and Soft Matter</p> <p>Mechanisms and Fundamentals</p> <ul style="list-style-type: none"> • Structure-property-process relationships to unravel and explain basic mechanisms in gels, foams and emulsions <p>Emulsions, Foams and gels</p> <ul style="list-style-type: none"> • Fundamental and applied work covering the use of nanocellulose and other polysaccharides as stabilizing agents in Pickering emulsions, gels, aerogels and foams. <p>Responsive Materials and Composites</p> <ul style="list-style-type: none"> • Synthesis, processing and application development of nanocellulose and polysaccharide based stimuli-responsive materials and multifunctional composites
<p>Biomedical Applications</p> <p>Wound Dressings</p> <ul style="list-style-type: none"> • Design and performance of nanocellulose-based wound dressings (hydrogels / bandages) <p>Tissue Engineering and Implants</p> <ul style="list-style-type: none"> • Preparation of nanocellulose-based scaffolds, scaffolds' physical / chemical properties and cell / tissue -scaffold interactions • Nanocellulose-based materials for use in medical implants <p>Drug Delivery</p> <ul style="list-style-type: none"> • Nanocellulose-based drug delivery systems
<p>Nanocellulose Electronics, Photonics and Energy Technologies</p> <p>Nanocellulose-Based Flexible/Bio Electronics</p> <ul style="list-style-type: none"> • Development, characterization and modeling of new materials for application in flexible electronics, wearable technologies, textile electronics.. <p>Energy Devices</p> <ul style="list-style-type: none"> • Novel developments and application of nanocellulose multifunctional films and nanocomposite structures for supercapacitors, batteries, catalysts and others • Novel developments in the use of nanocellulose to improve efficiency in photovoltaics and solar-thermal technologies <p>Photonics</p> <ul style="list-style-type: none"> • Applications of CNC-based chiral nematic photonic structures and new CNC hybrid materials for photonic properties • Transparent substrates, photovoltaics, light responsive structures, solar-thermal technologies
<p>Renewable Nanomaterials Production</p> <p>New Development in Production</p> <ul style="list-style-type: none"> • Microfibrillated Cellulose, Cellulose Fibrils/Filament, Cellulose NanoFibers, Cellulose Nanocrystals • Nanoparticles of lignin • Nano-chitin, Nano-chitosan, and other renewable nanomaterials <p>Challenges in Dewatering, Drying, and Redispersion of Dried Nanomaterials</p> <ul style="list-style-type: none"> • Structure-property-process relationships to unravel and explain basic mechanisms • Development, characterization and modeling to address challenges
<p>Product Stewardship and Safety</p> <p>Occupational Exposure and Risk Assessment</p> <ul style="list-style-type: none"> • Contributions about methods, data and analysis regarding occupational environment. <p>Safety in Applications</p> <ul style="list-style-type: none"> • Presentations addressing product safety across the value chain. <p>Life Cycle Analysis</p> <ul style="list-style-type: none"> • Contributions welcome on any aspect of Life cycle impacts from nanomaterials or nanoenabled products, from cradle to gate or cradle to cradle.

CONFERENCE CO CHAIRS

Prof. Akira Isogai, University of Tokyo

Dr. Alan Rudie, USDA Forest Products Laboratory

Prof. Lars Berglund, Wallenberg Wood Science Center , KTH Royal Institute of Sweden

Prof. Dr. Min Wu, Technical Institute of Physics and Chemistry, Chinese Academy of Sciences

Prof. Nathalie Lavoine, North Carolina State University

STUDENT OPPORTUNITIES

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. [Click here](#) to see past winners:

ABSTRACT SUBMITTALS

Submissions are due by **17 December 2018**. 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

17 December 2018 – Abstracts due

20 February 2019 – Acceptance letters sent to authors

REGISTRATION INFORMATION

Speakers must register by **13 April 2019** 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.

To learn more about the NanoDivision [click here](#).

USEFUL INFORMATION in JAPAN

To get useful information about Visa, Accommodation, Custom & Duty, Transportation, Cuisine & Foods and Tourism in JAPAN, [click here](#).

Questions?

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