

International Conference on Nanotechnology for Renewable Materials

14–18 June 2021

Scandic Marina Congress Center | HELSINKI, FINLAND



2021 CALL FOR PRESENTATIONS

The co-chairs for the 2021 NANO conference invite submissions for oral and poster presentations. We are planning for an in-person event. If this is not feasible due to the Covid19 situation, a hybrid conference or full virtual conference will be organized. 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.

Special Topics for 2021

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

Sustainable Packaging Solutions

To address the European and global demands on reducing the impact of certain plastic products on the environment, the 2021 TAPPI Nano Conference wants to highlight novel solutions for packaging and other products that can replace single-use plastic products. Topics can include biomimetics, biodegradability, compostability and recyclability studies, circular life and carbon footprint of materials, zero-waste through re-using solutions, among others.

Smart functional materials for biomedical and clinical applications

This Special Topic focuses on advanced functional materials designed for enhancing safety in biomedical and clinical environment. Topics can include design of protective personal equipment (PPE), antimicrobial or/and virucidal materials such as scaffolds, facemasks, packaging, controlled release systems of actives, inert or self-cleaning surfaces, among others.

TECHNICAL PRESENTATIONS ON NEW RESEARCH FINDINGS

Topics where novel research and new findings are presented are preferred while literature reviews are not encouraged.

Please see the detailed list on the following pages.

Characterization and Metrology from the Lab to Production Plant

Fundamental Cellulose Nanomaterial (CNM) Property Measurements

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

Metrology for CNM Production

- New metrology methods
- Commercial measurement needs (in-line, quantitative property control)

Matching CNM Properties to Applications

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

Self-assembled and Ordered Materials

- Colloidal Interactions and surface modifications guiding the assembly process
- Hybrid [Nano]Materials
- New Architectures

<p>Composite Processing and Testing</p> <p>Surface and Interfacial Interaction</p> <ul style="list-style-type: none"> • Surface modification, water absorption, adhesion <p>Composites Processing</p> <ul style="list-style-type: none"> • Drying, redispersion, processing methods, composite characterization <p>New, Emerging, and Remarkable Applications and Compositions</p> <ul style="list-style-type: none"> • Infrastructure, fire retardancy, membranes, additive manufacturing
<p>Paper and Packaging</p> <p>Self-Standing Films and Multilayers from Biomass</p> <ul style="list-style-type: none"> • Structure/properties/processing relationships: functional films and multilayers • CNM as greener alternative to plastics <p>Active and Intelligent Fiber-Based Packaging</p> <ul style="list-style-type: none"> • (Fiber-based) active and intelligent packaging: from lab scale to market renewable nanotechnology • CNM in food-related products <p>Renewable Nanotechnology for Functional Coatings</p> <ul style="list-style-type: none"> • Coating process (lab scale and beyond) and characterization (composition, durability, recyclability, sustainability) • Applications: functional/smart paper/paperboard substrates, edible coating etc.
<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 renewable nanotechnology 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 renewable nanotechnology 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 CNM-based wound dressings (hydrogels / bandages) <p>Tissue Engineering and Implants</p> <ul style="list-style-type: none"> • Preparation of CNM-based scaffolds, scaffolds' physical / chemical properties and cell / tissue -scaffold interactions • CNM-based materials for use in medical implants <p>Drug Delivery</p> <ul style="list-style-type: none"> • CNM-based drug delivery systems • Controlled release fundamentals
<p>Electronics, Photonics and Energy Technologies</p> <p>CNM-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 CNM multifunctional films and nanocomposite structures for supercapacitors, batteries, catalysts and others • Novel developments in the use of CNM 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 • Lignin Nanoparticles, Colloidal Lignin Particles, Nano-chitin/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/Risk Management</p> <ul style="list-style-type: none"> Presentations addressing product and consumer safety across the value chain. <p>Life Cycle Analysis</p> <p>Contributions welcome on end-of-life, recycling, biodegradation or any aspect of Life cycle impacts from nanomaterials or nanoenabled products, from cradle to gate or cradle to cradle.</p>
<p>Developing Standards to Support Commercialization</p> <p>Perspectives on developing and published standards</p> <ul style="list-style-type: none"> Updates on standards in development or published, either national or international Input from researchers and producers on the most urgent standards development needs <p>How to measure, how to standardize?</p> <ul style="list-style-type: none"> Perspectives or research advances on methods that are ready for standardization (nanomaterial-specific, application specific).

CONFERENCE CO CHAIRS

- Dr. Heli Kangas, VTT Technical Research Centre of Finland Ltd., Finland
- Dr. Orlando Rojas, Aalto University, Finland
- Dr. Gilberto Siqueira, EMPA, Switzerland

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 **8 January 2021**. 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](#).

Abstract submissions for the 2020 conference will not automatically be considered for the 2021 conference. If you would like your 2020 submission to be considered for presentation at the 2021 conference, you must resubmit it at via TAPPI's [Speaker Management System](#).

IMPORTANT DATES

8 January 2021 – Abstracts due

26 February 2021– Acceptance letters sent to authors

REGISTRATION INFORMATION

Speakers must register by **16 April 2021** 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](#).

Questions?

Technical Program: Lisa Stephens, lstephens@tappi.org, +1-770-209-7313

Submission Issues: Ariel Izebuzia, aizevbizua@tappi.org, +1 770-209-7220