8-11 June 2020 – Helsinki, Finland

2020 CALL FOR PRESENTATIONS

The co-chairs for the 2020 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.

Special Topics for 2020

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

Novel solutions for packaging and beyond (replacement of single-use plastics)
To address the European and global demands on reducingthe impact of certain plastic products on the environment, the 2020 TAPPI Nano Conference wants to highlight novel solutions for packaging and other products that can replace single-use plastic products.

Consideration for end-of-life, LCA, recycling, biodegradation
This Special Topic focuses on circular life of materials and biomimetics and especially on solutions towards zero waste through re-using, recycling, and increasing biodegradation.

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.

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

Composite Processing and Testing

Surface and Interfacial Interaction

- Chemical Surface modification strategy
- [Nano]composite Properties and Testing: Water sorption and Adhesion

Composites Processing

- Drying and redispersion of CNMs for enhanced compatibility
- Novel processing methods (e.g. additive manufacturing) and upscaling

New, Emerging, and Remarkable Applications and Compositions

- Functionalities: Lightweighing, Fire retardancy, Transparency/Optical properties, etc.
- Emerging applications: Infrastructure/Building, Additive Manufacturing, etc.

Paper and Packaging

Self-Standing Films and Multilayers from Biomass

- Structure/properties/processing relationships: functional films and multilayers
- CNM as greener alternative to plastics

Active and Intelligent Fiber-Based Packaging

- (Fiber-based) active and intelligent packaging: from lab scale to market renewable nanotechnology
- CNM in food-related products

Renewable Nanotechnology for Functional Coatings

- Coating process (lab scale and beyond) and characterization (composition, durability, recyclability, sustainability)
- Applications: functional/smart paper/paperboard substrates, edible coating etc.

Functional Materials and Soft Matter

Mechanisms and Fundamentals

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

Emulsions, Foams and gels

- Fundamental and applied work covering the use of renewable nanotechnology as stabilizing agents in Pickering emulsions, gels, aerogels and foams.

Responsive Materials and Composites

- Synthesis, processing and application development of renewable nanotechnology based stimuli-responsive materials and multifunctional composites

Biomedical Applications

Wound Dressings

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

Tissue Engineering and Implants

- Preparation of CNM-based scaffolds, scaffolds' physical / chemical properties and cell / tissue -scaffold interactions
- CNM-based materials for use in medical implants

Drug Delivery

- CNM-based drug delivery systems
- Controlled release fundamentals

Electronics, Photonics and Energy Technologies

CNM-Based Flexible/Bio-Electronics

- Development, characterization and modeling of new materials for application in flexible electronics, wearable technologies, textile electronics..

Energy Devices

- 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

Photonics

- 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

Renewable Nanomaterials Production
New Development in Production • Microfibrillated Cellulose, Cellulose Fibrils/Filament, Cellulose NanoFibers, Cellulose Nanocrystals • Lignin Nanoparticles, Colloidal Lignin Particles, Nano-chitin/chitosan, and other renewable nanomaterials **Challenges in Dewatering, Drying, and Redispersion of Dried Nanomaterials** • Structure-property-process relationships to unravel and explain basic mechanisms • Development, characterization and modeling to address challenges
Product Stewardship and Safety
Occupational Exposure and Risk Assessment • Contributions about methods, data and analysis regarding occupational environment. **Safety in Applications/Risk Management** • Presentations addressing product and consumer safety across the value chain. **Life Cycle Analysis** • 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.
Developing Standards to Support Commercialization
Perspectives on developing and published standards • Updates on standards in development or published, either national or international • Input from researchers and producers on the most urgent standards development needs **How to measure, how to standardize?** • Perspectives or research advances on methods that are ready for standardization (nanomaterial-specific, application specific).

CONFERENCE CO CHAIRS

- Dr. Orlando Rojas, Aalto University, Finland
- Dr. Heli Kangas, VTT Technical Research Centre of Finland Ltd., 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 **13 December 2020**. 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

13 December 2020 – Abstracts due

20 February 2020 – Acceptance letters sent to authors

REGISTRATION INFORMATION

Speakers must register by **13 April 2020** 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?

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