2023 International Conference on Nanotechnology for Renewable Materials

June 12 - 16, 2023

Westin Bayshore, Vancouver BC

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Have You Joined TAPPI's International Nanotechnology Division Yet?

What are you waiting for? TAPPI Nano members advance the responsible production and use of renewable and sustainable nanomaterials around the world.

As a member, you are part of:

- An elite, global forum of leading researchers, scientists, technical professionals, end users, and others who work together to develop and deploy renewable nanomaterials
- An organization dedicated to the responsible production, use and disposal of renewable nanomaterials
- An informational exchange and dissemination process used to advance nanomaterials science and technology
- An opportunity to engage today's students to become tomorrow's leaders in nanomaterials

You can reap the benefits of membership through activities on the:

- RESEARCH COMMITTEE – Collaborate on projects, applications, functionalization and characterization
- PRODUCERS COMMITTEE – Freely identify industry-wide and pre-competitive issues under TAPPI's strict antitrust policy
- STUDENT COMMITTEE – Enabling the next generation to engage in technical discussions, seek advice, access resources for career development
- WEBINAR COMMITTEE – Put your subject matter expertise front and center on a global stage

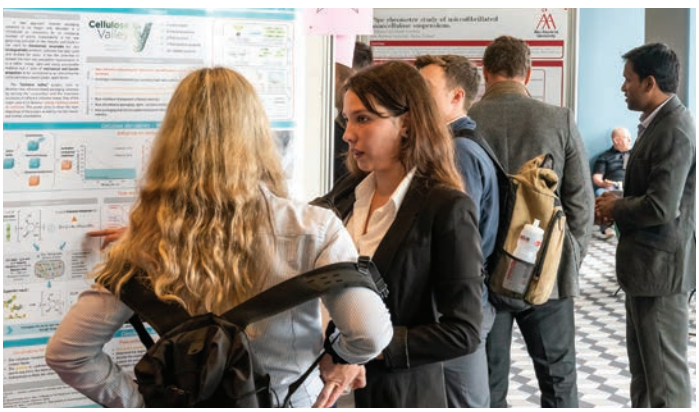
Be a part of a global community of nanomaterial experts and help advance this exciting, groundbreaking field

Join Today

To learn more about membership benefits, stop by TAPPI Registration and sign up to join TAPPI, the Division or a Committee. Or simply visit tappinano.org to join.

TAPPI NANO DIVISION

Contents



Dear Colleague,

It is a pleasure to welcome you to the 2023 TAPPI International Conference on Nanotechnology for Renewable Materials at the Westin Bayshore in Vancouver B.C. Canada.

We are excited to hold our event in-person in one of the key centers of applied research and business related to nanotechnology, and we thank you for joining us. We have a robust program for you focused on the latest technical advancements in production and use of renewable nanomaterials from around the globe.

We hope that our more than 130 technical presentations, workshops, and dynamic keynote presentations enable you to leave fully informed, engaged and excited about the current state of renewable nanomaterials.

Throughout the event, you will find numerous networking opportunities, including the Conference Dinner Cruise, Open Mixer, University and New Technology Showcase, Poster Session, and Student Poster Competition with more than 50 entries. We hope that you will not only visit the Poster Session in the exhibit hall to encourage this next generation of researchers, but also vote on the winning entries.

In addition to participating in the technical program, you'll want to explore Vancouver. With its scenic views, mild climate, and friendly people, Vancouver is known around the world as both a popular tourist attraction and one of the best places to live. Design, architecture, cuisine, and shopping are all great options to tour for culture enthusiasts. There's also plenty of stunning natural scenery from large park areas, to forests, and lake shorelines with numerous mountains sprinkled along the view. There's something for everyone!

To maximize your time at the conference, please download the Nano conference app to see the session schedule, view times and locations, and plan your day.

Most importantly, we'd like to thank the research committee, its subcommittees, session chairs, speakers and our sponsors and exhibitors. This conference would not have been possible without your tremendous support and dedication.

We hope you enjoy TAPPI Nano 2023. Welcome to Vancouver! By sea, land, and air, we prosper!

2023 Conference Chairs
Johan Foster, Chair, University of British Colombia
Lars Axrup, Co-Chair, Stora Enso
Meisha Shofner, Co-Chair, Georgia Tech

Conference Co-Chairs

Amir Sheikhi
Technical Program Chair

Lars Axrup
Conference Co-Chair

Johan Foster
Conference Chair

Meisha Shofner
Conference Co-Chair

Notes

Conference Highlights

Academic Tour at University of British Columbia

Date: Monday, 12 June 2023
Time: 8:30 - 14:30 | Shuttle will depart hotel at 8:30
(Separate registration required $50)

This tour welcomes you onto the University of British Columbia campus, which is consistently ranked among the top 20 public universities in the world. Here participants will have an opportunity to visit the Forest Sciences Center, Pulp and Paper Center, and more. Participants will also have the opportunity to explore the BioProducts Institute (BPI), a global center for research. At BPI, participants can observe fundamental and applied researchers working on solutions to today's climate and environmental challenges.

Refer to conference app for full tour schedule.

Industry Tour at Noram BC Research Inc.

Date: Monday, 12 June 2023
Time: 9:00 – 12:00 | Shuttle will depart hotel at 9:00
(Separate registration required $25)

Noram develops new technology by taking ideas from the bench to a testable pilot plant. On this tour, participants will have the opportunity to observe the analytical lab to view processes such as lignin fractionation, micro-plastic separation, and CNC related processes to support CNC manufacturing. Participants will also observe the pilot plant to view Mass Transfer Processes, Cross Flow Filtration, and CO2 Sequestration.

Refer to conference app for full tour schedule.

Newcomer's Lunch

Date: Monday, 12 June 2023
Time: 12:00 – 13:30 | Location: Salon F
For first time attendees only (Pre-registration is required.)

Enjoy lunch and learn more about the activities of the TAPPI Nano Division. A representative from each committee will share a brief presentation highlighting the mission, vision, and activities of their committee. This lunch is dedicated solely to first time TAPPI Nano attendees. Those Looking to join a TAPPI Nano Committee can get more information on how to do so during the lunch.

Conference Highlights

WORKSHOPS

Take your TAPPI Nano experience to the next level by joining a workshop. A separate registration is required to join a workshop. Please refer to the conference app for a full overview of the workshop and outline.

Register for one workshop:
Member $216 | Nonmember $266

Register for both workshops:
Member $432 | Nonmember $532

Opportunities for Cellulose Nanomaterials in Packaging Applications

Date: Monday, 12 June 2023
Time: 9:00-12:00 | Location: Salon E

Workshop Organizers:
Dr. Nicole Stark, Forest Products Laboratory
Dr. Ron Sabo, Forest Products Laboratory

This workshop will be an introduction into how cellulose nanomaterials can be used in packaging applications. The workshop will cover properties of CNs films alone, as a barrier application on paper and polymer substrates, and incorporated into other polymeric materials. The benefits of using CNs for packaging applications and resulting properties will be covered. Barrier properties are of specific interest, and a focused discussion will be provided on how to measure barrier properties and expected values relative to conventional packaging materials. Other areas for discussion include CN modification for packaging, biodegradability, and finally trends for both using CNs in packaging, and trends in the packaging industry which will allow for the use of these new materials.

Cellulose Nanomaterial (CNM) Characterization Workshop – Primary Characterization

Date: Monday, 12 June 2023
Time: 13:30-16:00 | Location: Salon D

Workshop Organizers:
Johan Foster, University of British Columbia
Robert J. Moon, USDA Forest Service - Forest Products Laboratory

For the advancement in understanding, process optimization, and utilization of cellulose nanomaterials (CNMs) it is critical to use characterization measurement protocols that give consistent, reliable, and accurate results. However, because of the exponential growth in interest/activity in CNMs, much of the development of these measurement protocols have been outpaced. This 2.5-hour workshop helps to address this gap by outlining the best practices and limitations for several techniques/methods typically used for the character¬ization of CNMs. Examples of such include surface charge, surface characterization, crystallinity determination and mechanical properties. Each topic will be covered by experts in the field for the given technique with the purpose to inform the audience as to why one should consider using a given technique (e.g., use “this” technique for “that” reason”), followed by a detailed best practice for the technique (e.g., here is the proper way to do “this” technique). Where possible, examples have been given to highlight how “this” technique results “this” data on “these” CNMs. Throughout the workshop, specific comments are made regarding any differentiation in the characterization of CNC versus CNF.

Conference Mixer hosted by TAPPI Student Committee

Date: Monday, 12 June 2023
Time: 19:30 – 20:30

This event hosted by the TAPPI Nano Student Committee, is a great opportunity to network with a diverse group of professionals in a relaxed environment while attending the 2023 TAPPI Nano Conference. This event offers a great way to combine both business and social networking. Enjoy drinks and appetizers with other professionals as well as Nano Division representatives. This event is also dedicated to those participating in the Mentor Program. Those participating as a Mentor will have the opportunity to meet and greet their assigned Mentee! This event is geared toward those who are 30 and under but is open to all conference attendees.

Conference Highlights

Mentoring Program Meet & Greet

Date: Monday, 12 June 2023
Time: 19:30 – 20:30
(Pre-registration is Required.)

Meet your Mentor/Mentee

This program is designed to help students, postdocs and young professionals make the most of their conference experience by pairing them with global leaders in renewable materials. This is a fun, informal opportunity for students and young professionals to meet, connect and make an impact. Experts are paired with young professionals to mentor them during the conference.

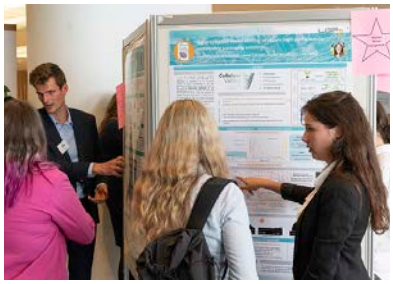
The Poster Session and Student Poster Competition

Date: Tuesday, 13 June 2023
Time: 17:00 – 19:00

Coordinated by: Nano Student Committee

Georgia Tech Renewable Bioproducts Institute

View poster presentations which focus on additional application, characterization, and functionalization of cellulose and other renewable nanomaterials. The poster session and student poster competition are held every year at the conference to showcase undergraduate and graduate research. Conference attendees are invited to vote on the student posters in the competition using the voting tool in the Conference App. Prizes are awarded to the top poster presenters.



New Technology Showcase

Date: Wednesday, 14 June, 2023
Time: 15:30 - 17:00

Attendees will have the ability to learn about exciting new technologies and advances developed by leading industry suppliers selected for the Showcase. Each company will deliver a brief presentation showcasing their technology, product, or service.

Attend this popular event to learn more about cutting-edge innovations and to speak directly with each presenting company.

Conference Networking Dinner Cruise & Awards Ceremony

Date: Wednesday, June 14
Time: 18:30 – 22:00
Separate Registration is required. Tickets are $100 for conference registrants and $175 for guests.

Join us as we socialize and network over dinner and music on board the Pride of Vancouver. Enjoy the gourmet buffet prepared to perfection followed by the awards ceremony. Then dance the night away or just sit back, relax and enjoy the view of Vancouver's beautiful skyline.

Conference APP Ad

Schedule of Events

Monday • 12 June 2023	
08:30 – 14:30	****Academic Tour: The University of British Columbia** *Shuttle Pick-up: Bayshore Grand Foyer*
09:00 – 12:00	****Industry Tour: Noram BC Research Inc.** *Shuttle Pick-up: Bayshore Grand Foyer*
12:00 – 13:30	**Newcomer's Lunch** *Room: Salon F*
13:30 – 16:00	****CNM Characterization Workshop – Primary Characterization** *Room: Salon D*
09:00 – 12:00	****Opportunities For Cellulose Nanomaterials in Packaging Applications** *Room: Salon E*
14:30 – 16:00	***NANO Research Committee Meeting** *Room: Salon E*
16:00 – 17:30	**OPENING SESSION AND KEYNOTE** *Room: Salon ABC*
17:30 – 18:30	**Welcome Reception & Trade Fair** *Room: Bayshore Grand Foyer*
18:30 – 19:30	**Mixer** *Room: Salon F*

Tuesday • 13 June 2023			
08:30 – 10:00	**Session 2 : CNC Nanocomposites** *Room: Salon D*	**Session 3: Design and Production of Nanocellulose Films** *Room: Salon E*	**Session 4: CNM Self-Assembly and Related Properties** *Room: Salon F*
10:00 – 10:30	**Break** *Bayshore Grand Foyer*		
10:30 – 12:00	**Session 5: CNC Based Packaging Materials and Films** *Room: Salon D*	**Session 6: Nanocellulose for Construction** *Room: Salon E*	**Session 7: CNM Characterization and Regulatory Aspects** *Room: Salon F*
12:00 – 13:30	**Lunch with Presentation Sponsored by Fiberlean® Technologies Ltd.** *Room: Salon ABC*		
13:30 – 15:00	**Session 9: CNC Application Is Emulsion** *Room: Salon D*	**Session 10: Polymer Composites** *Room: Salon E*	**Session 11: Special Topics- Development of CNM Use in Targeted Applications** *Room: Salon F*
15:00 – 15:30	**Break** *Bayshore Grand Foyer*		
15:30 – 17:00	**Session 12: Panel Discussion on International Nanomaterial Regulations and Ongoing Characterization Challenges** *Room: Salon ABC*		**Session 13: Student Rapid Fire** *Room: Cypress*
17:00 – 19:00	**Session 14: Poster Session, Student Poster Competition and Product Showcase** *Room: Bayshore Grand Foyer*		

*Invitation Only
** Additional Registration Fee Required

Schedule of Events

Wednesday • 14 June 2023			
08:30 – 10:00	**Session 15: Special Topics: Dispersion of CNMs In Polymer Matrices or Elastomers** *Room: Salon D*	**Session 16: Packaging I** *Room: Salon E*	**Session 17: Advancing Commercial Production of Nanomaterials** *Room: Salon F*
10:00 – 10:30	**Break** *Bayshore Grand Foyer*		
10:30 – 12:00	**Session 18: Advanced Characterization Strategies for CNM Distribution and Other Properties** *Room: Salon D*	**Session 19: CNC Structures and Fundamentals** *Room: Salon E*	**Session 20: Lignin-Based Nanomaterials** *Room: Salon F*
12:00 – 13:30	**Sponsored Keynote Lunch** *Room: Salon ABC*		
13:30 – 15:00	**Session 22: CNC-Based Nanocomposites** *Room: Salon D*	**Session 23: Applications in Electronics** *Room: Salon E*	**Session 24: New Methods in CNM Material Characterization** *Room: Salon F*
15:00 – 15:30	**Break** *Bayshore Grand Foyer*		
15:30 – 17:00	**Session 25: New Technology Showcase** *Room: Salon D*	**Session 26: Safety and Regulatory Evaluation** *Room: Salon E*	**Session 27: Nanofibrillated Cellulose for Biomedical Applications** *Room: Salon F*
17:00 – 18:30	**Session 28: End User Panel** *Room: Salon ABC*		
18:30 – 22:00	****Conference Dinner** *Spirit Cruises*		

Thursday • 15 June 2023			
08:30 – 10:00	**Session 29: CNC Applications I** *Room: Salon D*	**Session 30: Nanocellulose Foams and Their Applications** *Room: Salon E*	**Session 31: Surface Modified CNFs & CNF Production** *Room: Salon F*
10:00 – 10:30	**Break** *Bayshore Grand Foyer*		
10:30 – 12:00	**Session 32: CNC Applications II** *Room: Salon D*	**Session 33: Packaging II** *Room: Salon E*	**Session 34: Production of Specialty Nanomaterials** *Room: Salon F*
12:00 – 13:30	**Lunch with Academic Keynote Presentation** *Room: Salon ABC*		
13:30 – 15:00	**Session 36: Lignin Structures for New Materials** *Room: Salon D*	**Session 37: Production of Cellulose Nanocrystals** *Room: Salon E*	**Session 38: Student Session - Career Roundtable** *Room: Cypress*
15:00 – 15:30	**Break** *Bayshore Grand Foyer*		
15:30 – 17:00	**Session 39: Bio-Based Nanoparticles** *Room: Salon D*	**Session 40: Emerging Applications in Electronics and Water Treatment** *Room: Salon E*	**Session 41: Dewatering of Nanomaterials** *Room: Salon F*
17:00 – 18:00	**2023 Nano Conference Wrap Up Meeting** *Room: Seymour*		
18:00 – 19:00	**2024 Nano Conference Planning Meeting (Invitation Only)** *Room: Seymour*		

Friday • 16 June 2023	
08:00 – 11:00	**Producers Committee Meeting (Invitation Only)** *Room: Seymour*

Keynote Speakers

Gurminder Minhas

Managing Director,
Performance BioFilaments

16:00 – 17:30
Monday, 12 June 2023

"The 10 Year Journey of a Biomaterials Company"

PRESENTATION SUMMARY:
Performance BioFilaments was launched in June 2014 in Vancouver BC, coincidentally the same month that the Tappi Nano Conference was held in Vancouver. Gurminder will speak about the journey that Performance BioFilaments has been on since the launch of the company. He will cover some of victories, some of the challenges and some of the surprises along the way.

ABOUT GURMINDER MINHAS
Gurminder Minhas is a business and technical development specialist, with extensive experience in biomaterials, biofuels, biochemicals, chemical recycling, pulp and paper industries. He is well versed in new technology development in the chemical sciences space, as well as growing technologies from lab to pilot scale to commercialization. As Managing Director of Performance BioFilaments, Gurminder is responsible for developing commercial opportunities for fibrillated cellulose products in composites and chemical applications. Gurminder is also the former Director of Technology *Deployment* at Lignol Innovations, a Canadian company commercializing a proprietary biomass to fuels and chemicals technology. Gurminder holds a BSc in Chemistry from UBC, followed by a MBA from Simon Fraser.

Enrico de Landerset

CEO, FiberLean Technologies

12:00 – 13:30, Tuesday, 13 June 2023

How is MFC Revolutionize Paper, Packaging, Building Materials, and More?

PRESENTATION SUMMARY:
Enrico de Landerset, CEO, and Sean Ireland, Vice President of Business Development, will highlight game-changing, sustainable opportunities made possible with industrial-scale MFC Production Units. These MFC Production Units along with surface applicators are used to achieve flexibility, strength, and new dimensions for existing, evolving, and entirely new products.

Innovative options to be reviewed include lightweighting, brown-to-white conversions without rebuilds or CapEx, alternative coatings—all with sustainability advantages.

Natural and less costly raw material substitution options will be shown to deliver equal or higher performance. New concepts with composite materials will be discussed, as well as minimizing starch and non-sustainable synthetic additives. An important focus will be on the strength of know-how to bring revolutionary advances at low risk.

ABOUT ENRICO DE LANDERSET
Enrico de Landerset, CEO of FiberLean Technologies Lts., leads commercial efforts and vision for this completely transformed company. Customer-focused, he is a forward-moving leader in scalable MFC Production Units, surface Jet applicators and proprietary Drying Units, delivering higher profits for paper and boardmakers... as well as other developing market segments such as panelboard, ceiling tiles, and coating bananas. Under the ownership of Werhahn, a German family-owned conglomerate, he has the support to provide advanced biomaterial solutions to reach sustainability targets now and in the long term.

As a change management leader, de Landerset has extensive experience in business startups and turnarounds across diverse industries such as manufacturing, service, power & gas, and trading/distribution companies. De Landerset is experienced in developing and implementing business strategies in effort to drive cultural and organizational changes necessary to achieve targeted goals. He has led M&A processes from data rooms and due diligence to final integration plans.

De Landerset has a decade of experience as CFO and is always performance management and strategic planning driven. His marketing and commercial business model for FiberLean centers around customers, delivering more from the patents, know-how, and experience of the most comprehensive R & D and applications teams in MFC.

He has multiple Master of Business degrees from the University of Verona, including Business Intelligence, Economics, and Management. His undergraduate business and economics degree is from the University of Parma.

Keynote Speakers

Sean Ireland

Vice President Business Development, FiberLean Technologies

12:00 – 13:30, Tuesday, 13 June 2023

How is MFC Revolutionize Paper, Packaging, Building Materials, and More?

ABOUT SEAN IRELAND

Sean Ireland is Vice President Business Development for FiberLean Technologies, responsible for global development opportunities. He has over 30 years' experience in electronics, electrical engineering and process control from the military to industrial manufacturing; however, his real desire is in growing new technologies globally through his passion and motivation. Almost two decades ago, Ireland's interest shifted to the physical and surface sciences of nano-scale technologies with a focus on cellulosic nanomaterials. During that time, he has delivered multiple keynote presentations on nanotechnology to diverse audiences across the globe, striving to motivate them to work with these new materials. Additionally, Ireland has been integral in working with multiple government agencies to obtain federal funding for critically needed nanocellulosics research and development.

Prior to working for FiberLean Technologies, he served in the U.S. military where he earned his officer commission and his wings. He then went on to fly the F-16 Fighting Falcon. Later, Ireland was appointed as the Commander of the 174th Forward Operating Location (FOL) located at 10th Mountain Division, Fort Drum, NY.

Over the past 25 years, Ireland has worked for Champion International, International Paper, Verso Paper and FiberLean Technologies during which he is credited with patents and applications in nanocellulose enhanced composites, polymers, building materials, neural modeling, specialty paper and coating formulations. He has authored or co-authored several technical papers on non-linear systems and nanocellulose technology and papers on the vision for nanotechnology. Ireland is very active in TAPPI's Nanotechnology and other divisions. He was an Adjunct Professor in the School of Chemical Engineering, University of Maine, was the first Chair for the TAPPI Nano Division, and the Scientific Advisory Board for P3Nano.

Julien Bras

Associate Professor, Grenoble INP

12:00 – 13:30 Thursday, 15 June 2023

"Nanocellulose: Is It Really a Good Solution for Sustainable Packaging?"

PRESENTATION SUMMARY:

Over the last decade, the nanocellulose industry has focused its efforts to up-scale the production and commercialization of various types of nanocellulose. This key step has taken longer than expected despite the great properties of these biobased materials, mainly because of process issues regarding sustainability and energy consumption.

It was also not so easy to find tangible nanocellulose applications, even in packaging, one of the most commonly described and expected applications.

Bras will discuss some of the main challenges in the sustainable packaging industry and will share how nanocellulose can be used to create promising solutions by providing some examples from his R&D background. During this presentation, Bras will focus on the nanocellulose production and sustainable process, the value-added functionalization of such materials and the application of such nanocellulose on 2D and 3D packaging.

ABOUT JULIEN BRAS

Julien Bras, Ph.D. is an associate professor at Grenoble Institute of Technology (Grenoble INP Pagora). He earned his doctorate in renewable materials for bio-packaging in 2004 and worked in industry few years as Innovation Manager for Ahlstrom Specialty Paper before leaving the industry to become an associate professor in 2006.

During his tenure at Grenoble, he has directly supervised 35 Ph.D. candidates, 23 Post-docs and more than 60 master students focusing on research on Nanocellulose, Biomaterials and specialty papers.
He is member of Institut Universitaire de France (IUF junior, 2016-2019 and IUF Senior, 2022-2027, top grant for 2% of French professor). He received the French Academy of Science Major Prize of Innovation (IMT Espoir) in 2017 and the TAPPI Nanotechnology Division's Mid-Career Award in 2019. For the last eight years, he has served as the head of the "Multiscale Biobased Material" group and was deputy director of Laboratory of Pulp & Paper Science, LGP2 for three years.

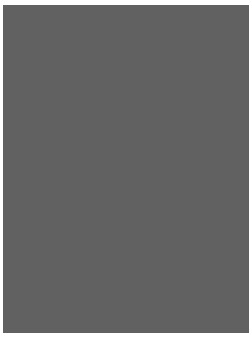
continued on next page

Keynote Speakers

Julien Bras, continued from previous page

Bras completed a two year sabbatical from 2019-2021 where he worked with Nestle as Senior Expert and Department Head in the Institute of Packaging Science in their global Research Center in Lausanne, Switzerland. He has contributed to the creation of this institute, its project portfolio and led some key projects on cellulose-based packaging materials and barrier properties. He was also in charge of science, sustainability, food safety, innovative technologies and academic alliance in the institute before returning to academia.

Since 2021, he is in charge of the International Affairs of Grenoble INP Pagora and of International Master on biorefinery and biomaterials program. He launched the Cellulose Valley Chair in 2022 with eight companies in five years. Through his experiences, he has developed several competences. His expertise deals particularly with nanocellulose, paper science, bio-based and smart materials, mainly for sustainable packaging applications.



Additional Keynote

Lorem Ipsum,
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??:00 – ??:30
????day, ?? June 2023

"Lorem Ipsum Dolor Sit Amet Consectitur Amed

PRESENTATION SUMMARY:
Lorem ipsum.....

Notes

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EPFL

TAPPI Nano Division Awards Winners

This year's awards will be presented on Wednesday, 14 June 2023 at the awards ceremony held during the conference dinner cruise.

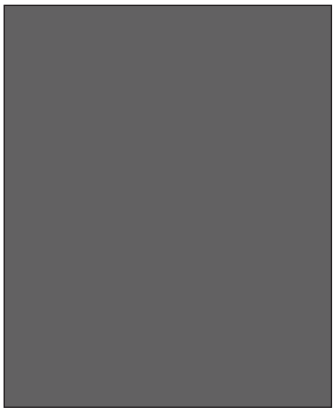
International Nanotechnology Division's Leadership and Service Award

Emily Cranston
University of British Colombia

Dr. Emily D. Cranston is a Professor in Wood Science/Chemical & Biological Engineering at the University of British Columbia (Canada) and is the President's Excellence Chair in Forest Bioproducts. Prior to 2019, she was an Associate Professor at McMaster University and Canada Research Chair in Bio-Based Nanomaterials. Emily acted as the Vice-Chair of the TAPPI Nano Division from 2014 to 2020, co-chaired the TAPPI Nano conference in Montreal (2017), co-founded the annual end users' panel discussion at the TAPPI Nano conference, and her graduate students pioneered the TAPPI Nano Student committee. She is highly cited, highly funded, and has won prestigious awards typically reserved for late career scientists.

International Nanotechnology Division Award and FiberLean® Technologies Prize

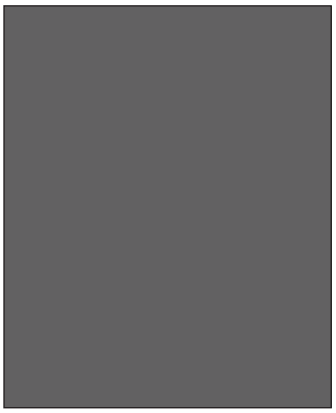
Soydan Ozcan
Oak Ridge National Laboratory



Bio coming...

International Nanotechnology Division's Mid-Career Award

Feng Jiang
University of British Colombia



Bio coming...

TAPPI Nano Division Awards Winners

International Nanotechnology Division's Student Award

Eupidio Scopel
University of Campinas

Eupidio Scopel is a PhD Candidate in Chemistry at the University of Campinas (Unicamp, Brazil), supervised by Dr. Camila Rezende, and a visiting student at the University of British Columbia, supervised by Dr. Emily Cranston. He has a Master's degree in Chemistry from Unicamp and a Bachelor's degree in Chemistry from the Federal University of Espírito Santo (UFES, Brazil). Eupidio's research is focused on using bio-based macromolecules to architect materials and colloidal systems inspired by plant cell wall composition and structure. His works include lignocellulosic biomass fractionation, the production of cellulose and lignin nanomaterials, and their characterization and application, mainly in hydrogels, filaments, and emulsions. Since 2022, he has served as Co Vice-Chair on TAPPI Nano Student Committee.

Nano Division Young Professional Award

Keith Gourlay
Performance Biofilaments

Keith Gourlay has a PhD in Forestry from the University of British Columbia and has over 10 years' experience in bioproducts research. Gourlay achieved his bachelor's degree in Biochemistry from Queen's University in Ontario, Canada in 2008. He then went on to complete his Masters in Research from The Imperial College of Science, Technology, and Medicine in London, UK in 2009.

Gourlay now works as the Director of Technology Development at Performance BioFilaments Inc, where he leads the development of new applications for nanofibrillated cellulose in areas such as composites, concrete, nonwovens, and mining applications. Keith is passionate about driving positive environmental change through the industrial implementation of new high-performance sustainable products.

He has served on the Research Committee and Producers Committee for the TAPPI Nanotechnology for Renewable Materials Conference since 2018.

Nano Division Outgoing Chair Award

Heli Kangas
Valmet

Bio coming...

Student Highlights

TAPPI Nano 2023 features many activities put on by and for students.

Career Panel

Students and young professionals, this is a valuable opportunity to learn from professionals in the industries. Speakers will give short presentations about their professional development journeys and will be available to answer questions from the audience.

The Mentor Program

The Mentor Program is the cornerstone of the Nano Division's Leadership Council's commitment to improving networking and career development opportunities for nanotechnology students. The Mentor Program matches students with a mentor in the industry/academia/government sector that can help them not only make the most of their conference experience, but also serve as an advisor throughout their studies and career developments.

Student Rapid-Fire

Organized by the TAPPI Nano Student Committee, the Rapid-Fire Session will allow students to share a brief summary of their Poster presentation! In this session, each student will have 3 minutes to give a brief description of their project, depiction of their findings and a summary of their results. As the name suggests, each student will present in "rapid-fire" succession to allow all students the opportunity to share their research.

Student Spotlight on Student Presenters

Stop by the Nano Division Student committee table to see student presenters featured at this year's conference. A looping presentation will feature student bios, photos, and key points about their presentations.

Student Booth

Students, you're invited to stop by the Student Booth at any point during the conference. This is a great opportunity to learn from Student Committee members about the Committee and its activities. Student presenters will be spotlighted here, too.

Student Poster Session Competition

The student poster session is your opportunity to display your research work in poster format. The session is an ideal setting for conference attendees to view your work in an informal and conversational setting. Students are present to discuss their work. Posters are judged by conference attendees and the top-ranking posters are eligible for prizes.

Student Session Co-chairs

Watch for student session co-chairs at selected sessions during the conference. Students will gain experience and knowledge by helping out in this key role.

Student Committee

Emilien Freville
Co-Chair
University Grenoble Alpes CNRS

Robyn Hill
Co-Chair
University of Birmingham

Eupidio Scopel
Co-Vice Chair
Institute of Chemistry - Unicamp

Yufei Nan
Co-Vice Chair
Auburn University

Gili Bar
Engagement Co-Chair
University of British Columbia

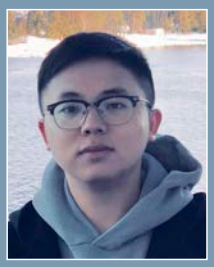
Julia Pescheux-Sergienko
Engagement Co-Chair
University Grenoble Alpes, CNRS

Javier Rodriguez
Secretary
University of Birmingham

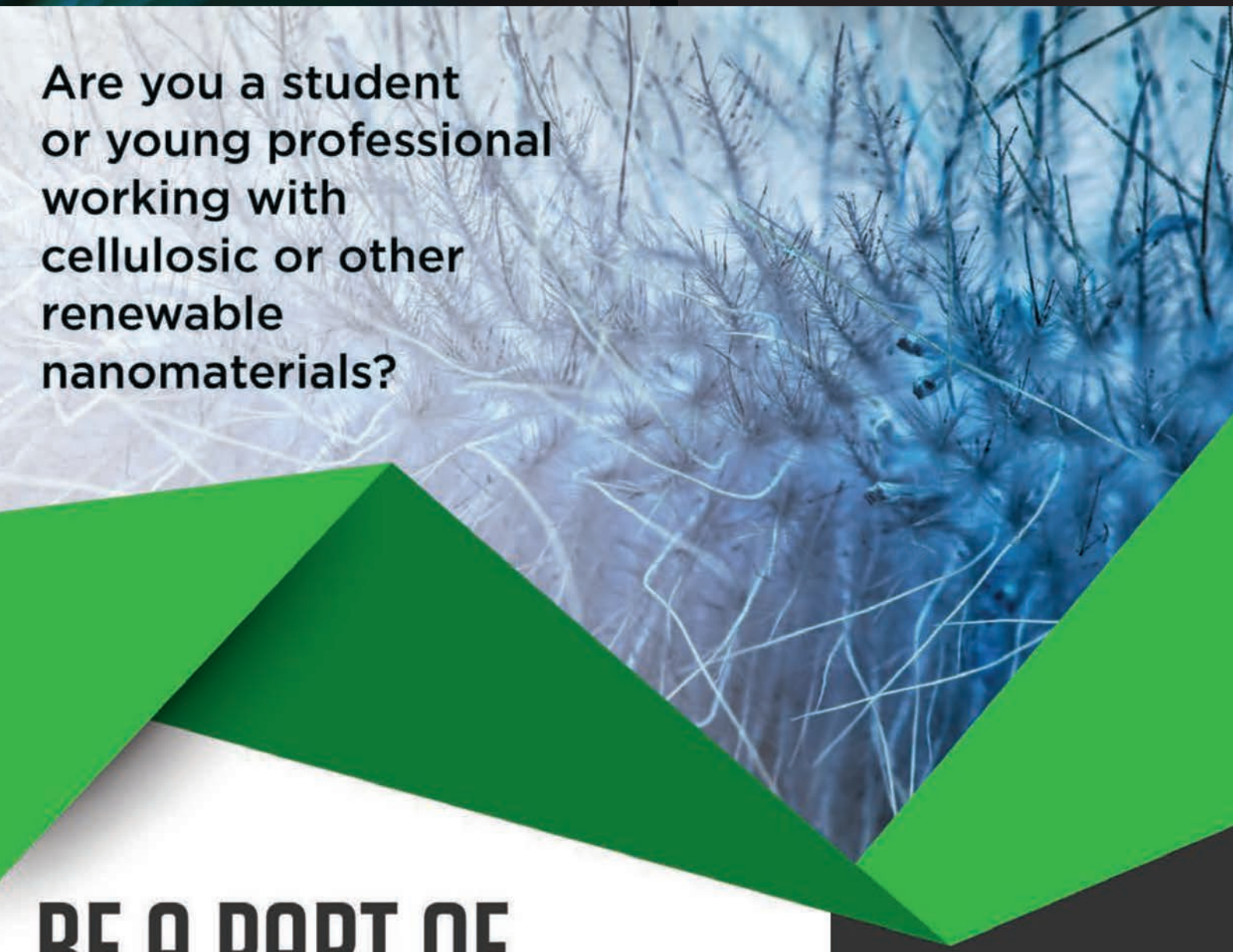
Anderson Veiga
Secretary
University of British Columbia

Ariane Fernandes
Member at Large
University of British Columbia

Xia Sun
Member at Large
University of British Columbia



Yuhang Ye
Member at Large
University of British Columbia



Are you a student or young professional working with cellulosic or other renewable nanomaterials?

BE A PART OF SOMETHING BIGGER THAN NANO...

Help build TAPPI Nano's Global Network for Students and Young Professionals

Visit www.tappinano.org to learn more.

FOLLOW US AND JOIN THE CONVERSATION

Linkedin www.linkedin.com/groups/12037880/

Twitter www.twitter.com/TAPPINanoStdnts

Join the TAPPI Nano Division Student Committee and:

- Connect with students and young professionals around the world
- Share knowledge and ideas to make an impact
- Produce student-led webinars, newsletters, forums and surveys that engage students
- Learn how to transition from academia to industry
- Design and shape events for students at TAPPI's annual Nano conference

General Information

ADA Assistance
Attendees with special needs are encouraged to contact the staff at the TAPPI Registration Desk so TAPPI can make your participation more enjoyable and meaningful.

Antitrust Policy Statement
TAPPI is a professional and scientific association organized to further the application of science, engineering, and technology in the pulp and paper, packaging and converting, and allied industries. Its aim is to promote research and education, and to arrange for the collection, dissemination and interchange of technical concepts and information in fields of interest to its members. TAPPI is not intended to, and may not, play any role in the competitive decisions of its members or their employers, or in any way restrict competition among companies.

Commercialism Policy
Although commerce is a driving force for our technologies, TAPPI technical sessions are not a platform for commercial (sales) presentations. Presentations that are technical and objective enhance the credibility of the presenter and his or her organization. Restricting commercialism ultimately benefits both the presenters and the TAPPI audience. Excessive use of brand names, product names or logos, failure to substantiate performance claims, and failure to objectively discuss alternative methods, processes or equipment are indicators of sales presentations.

Badges
It is important that the official badge supplied at the time of registration be worn at all times. This practice is a courtesy to your fellow registrants. It also indicates that you have completed registration and may participate in the events scheduled. Admission to technical sessions and workshops will be by badge only.

Hosted Events not sponsored by TAPPI
All company hosted events (customer meetings, social events, etc.) that are not officially a part of TAPPI's program may not conduct group functions which compete with scheduled TAPPI activities, such as technical sessions, committee meetings, receptions, award ceremonies, group meals and trade fairs or exhibits. If you are planning to host a group event, please check with the TAPPI Account Manager to avoid conflict.

TAPPI's Policy Regarding Equipment at Non-Exhibit Events
TAPPI prohibits the unauthorized physical display or demonstration of equipment in sessions, workshops, or committee meetings held during TAPPI seminars, short courses, conferences, or other meetings unless approved by the TAPPI Account Manager. This prohibition does not preclude the graphic non-commercial depiction of equipment via slides, pictures, or video tape. This prohibition is intended to preclude commercialism and to minimize attendee exposure to potentially dangerous equipment and to avoid conflicts with contractual and governmental requirements regarding the use of meeting facilities. All inquiries should be directed through the TAPPI Account Manager on-site.

Lost and Found
Articles which are found should be brought to the Registration Area. Please note the room in which the article was found for the purpose of tracing it to the appropriate owner.

Membership and Publication Information
TAPPI membership dues, membership applications (TAPPI and committee), and requests for TAPPI publications may be obtained at the registration.

Nonmembers of TAPPI
If you apply for membership in TAPPI while at this meeting, you will be able to register at the member rate. Take advantage of this opportunity to join TAPPI and save money.

Photographic Consent
Photographs may be taken during this meeting for TAPPI to use for publicity purposes. A registrant's presence at the meeting constitutes consent for TAPPI to use the photographs in which he or she may appear.

Ribbons
Association, technical division, and committee officers are requested to pick up their ribbons at the registration desk. Session chairmen and speaker ribbons will also be available at the registration desk.

Tax Deduction for Educational Expenses
U. S. Treasury regulation paragraph 1.162.5 permits an income tax deduction for educational expenses (registration fees and cost of travel, meals, and lodging) undertaken to: (1) maintain or improve skills required in one's employment or other trade or business, or (2) meet express requirements of an employer or a law imposed as condition to retention of employment, job status, or rate of compensation. Under the Tax Reform Act of 1993, however, non-reimbursed employment-related
educational expenses are deductible only to the extent that they exceed 2% of adjusted gross income. In addition, the new tax law limits the deduction for otherwise allowable business meals and business entertainment to 50% of cost.

Use of Personal Video Recording Equipment at Technical Sessions
The use of personal recording equipment to record technical sessions at TAPPI conferences is strictly prohibited. Only TAPPI's official designee is authorized to video tape sessions. Should a company and/or individual seek to violate this prohibition, that company and individual will be barred from giving technical presentations at TAPPI sponsored events for a period of two years, that period starting from the date of infraction. TAPPI staff is authorized to have equipment in violation of this policy immediately removed upon detection and shipped to the owner's principle location at the owner's expense. Inquiries on this policy should be directed to the TAPPI Meetings Department, c/o TAPPI headquarters.

Safety Information

Fire Survival
When you reach your hotel room, ask yourself: Can I close my eyes, hold my breath, and go directly to the nearest fire exit WITHOUT LOOKING in 15 seconds? You may have to do just that:

- Under emergency conditions
- In smoke
- In darkness
- At 3:00 a.m.

Because panic is the main problem in unfamiliar surroundings, you should prepare for emergencies when you travel. The following information is provided to help you prepare for a hotel fire emergency. Remember that by-products of fire (gases, smoke, etc.) kill more people than fire itself.

Survival Plans

- Familiarize yourself with your new surroundings by checking the emergency exit and escape routes.
- Ensure that doors are unlocked and exit routes are free of obstructions.
- Study the room you are staying in (do the windows open, what is the distance to the ground, etc.).
- Avoid elevators in emergency situations.
- Count the number of doors and walls between your room and the emergency exits. Smoke could obscure lighted signs.

Before and After Leaving the Room

- When an alarm sounds, slowly feel the surrounding walls and doors with the back of your hand. If the door is warm, stay as low as possible (to avoid smoke) and open it slowly. If the door and walls are not warm, proceed toward the emergency exit using the most direct route. If the smoke is too heavy, remain in room.
- Take the key with you. You might find it safer to return to your room.
- If the smoke thickens as you go down the escape stairs, go up one flight and cross over to an alternate staircase.
- If access to the alternate staircase is blocked, proceed to your room and wait for assistance.
- Avoid breaking windows. Broken windows can allow fire and smoke into the room. If a window must be broken or opened, dangle a bed sheet from the window as a signal to firemen. Don't jump if the fall is more than two stories.

If You Cannot Leave the Room

- Place towels and bedclothes around the door areas. Keep them soaked with water.
- Fill the bathtub and use it as a reservoir for wetting down the entire room. Placing yourself in a filled tub will not offer protection.
- Hold a wet towel around your face to filter smoke.
- Dial the hotel emergency number (0) to tell rescue personnel where you are.

General Safety Tips

To make your conference experience a safe and enjoyable one, please keep the following safety tips in mind. While you are out of the hotel, please know that, like in all cities, awareness and caution are certain to help ensure your safety. A common crime is pick pocketing, with women's purses being the prime target. Some simple precautions you can take are:

- Never carry all of your valuables in the same place. Keep them secured in a safe deposit box.
- Never walk alone at night, especially to off property locations; there really is safety in numbers!
- Do not leave purses, briefcases or other personal property unattended in public locations. Use hotel services such as a coat check or luggage storage.
- Remove your name badge while out of the hotel. They identify you as an out-of-towner and easy target for crime.
- Women: carry your purse with the strap over your shoulder and across your chest, keeping it closed or latched with the bag portion in front of you. For added protection in crowds, you can rest your hand on top. Be particularly watchful of distractions in revolving doors, elevators or in the public.
- Men: Wrap a heavy rubber band around your wallet to prevent it from being easily slipped out of your pocket or carry it in your front pants pocket.
- If you find that you have become a victim, report the crime to the police.
- Report any suspicious persons or behavior in the hotel or convention center to the registration desk or any TAPPI staff

Innovations are always on the horizon. See you in 2024!

International Conference on Nanotechnology for Renewable Materials

10-14 JUNE 2024

ATLANTA, GEORGIA USA
at the Westin Buckhead Atlanta

TAPPI NANO DIVISION