



PaperWeek Detailed Program

***Please refer to program online for latest updates**

MONDAY FEBRUARY 7, 2022

10:00 - 11:30

Papermaking Chemistry

Session Chair: Jacques Perrault, Cascades CS+

10:00 "Improving Strength and Speed through Enzymatic Fiber Modification", **Maurice Rizcallah**, *Buckman*

10:30 "Mastering Retention Chemical Injection and Control on a Modern Board Machine", **David Paque & Peter Jelinek**, *Kemira*

11:00 "Strategic Approach to Dry Strength Market Needs", **Pascal Rivard**, *Solenis*

Control Systems

Session Chair: Kerry Figiel, International Paper

10:00 "Aliasing performance of variable-speed scanning in cross-direction control of paper web", **Seyhan Nuyan & Calvin Fu**, *Valmet*

10:30 "A different approach to understanding, when it comes to dirt spots in paper", **Anders Nilsson**, *FrontWay AB* & **Lars Eriksson**, *Mare Nordic AB*

11:00 "Improving Operating Margins of Pulp Mills with Advanced Process Control", **Bill Poe**, *AVEVA* & **Alec Rancourt**, *Schneider Electric*

11:30 - 12:30

Networking and Lunch Break

13:00 - 14:00

OPENING SESSION

13:00 Welcome address by **Mr. Greg Hay**, *Executive Director, PAPTAC* and **Dr. Marzouk Benali**, *Natural Resources Canada/CanmetENERGY, BIOFOR Conference Chair*

13:10 Address by **Yvonne Jones**, *Parliamentary Secretary to the Minister of Natural Resources and Parliamentary Secretary to the Minister of Northern Affairs, Canada*

13:25 Address by **Pierre Dufour**, *Minister of Forests, Wildlife and Parks, Government of Quebec*

13:40 Overview of RYAM and update on projects at Temiscaming, **Vito Consiglio**, *CEO, Rayonier AM*

12:30 - 14:00

Energy

Session Chair: Serge Bédard, Natural Resources Canada

12:30 "Advanced Asset Performance Management Tool for Energy Efficiency Improvement in P&P Mills", **Hakim Ghezzaz**, *CanmetENERGY*

13:00 "How to enable the transformation of energy use in paper industry needed for the future", **Esa Vakkilainen**, *LUT University*

13:30 "Optimizing Biomass Boiler Combustion and Maximizing Heat Capture for Increased Thermal Efficiency", **Samit Pethe**, *Jansen Combustion and Boiler Technologies Inc.*

Reliability

Implementing Reliable Manufacturing

10 Questions Leaders, Advocates and Managers need to ask (and get answers) - **Tim Dunton**, *Director, Reliability Solutions*

This presentation will present and discuss 10 Key questions that should be asked of any organization that is trying to implement Reliable Manufacturing. We will discuss what the answers should be and what good looks like. For each of the Big 10 there will be a series of observations and challenges that participants can take back to their facilities and assess their current state.

Tim is an astute teacher with over 30 years experience and extensive qualifications in machinery troubleshooting and problem-solving, condition monitoring program design, implementation and operation.

14:00 - 14:30

Networking Break

14:30 - 16:00

Tissue Making – Artificial intelligence / data analytics

Session Chair: Martin Desrosiers, Kruger Products

14:30 "Artificial intelligence and machine learning enable major savings in the tissue, pulp and paper industry", **Timo Arra**, *TietoEVERY, Pulp, Paper and Fibre Industries - Industry Software*

15:00 "AI in the pulp & paper industry: what's at stake and how to succeed", **Tristan Mallet**, *Boston Consulting Group (BCG)*

15:30 "Benefits of AI-Driven Autonomous Chemistry Control for Papermaking", **Matthew Callicott**, *Solenis*

Bleaching

Session Chair: Mona Henderson, Valmet

14:30 "Using Bleaching Stage Models for Benchmarking Softwood ECF Bleach Plants", **Brian Brogdon**, *Future Bridge Consulting Services, LLC*

15:00 "Improving Washer Performance with Chemical Cleaning", **Michael Pinard**, **Kelly Dufour**, and **Nick Sirois**, *Domtar Inc*

15:30 "Z-ECF and Z-TCF Bleachings of Softwood Kraft Pulp", **Alexis Metais**, *Xylem*

BIOFOR

Session Chair: Dr Marzouk Benali, Natural Resources Canada/CanmetENERGY, BIOFOR Conference Chair

14:30 **Keynote:** "The Lignin Bioeconomy: Canadian Standards to Reach New Markets", **Fanny Monteil-Rivera**, *National Research Council of Canada* and **Melanie Pinatton**, *CSA Group*

15:30 "Impacts of low carbon policies and renewable fuels opportunities for the forestry sector", **Jawad Jeaidi**, *Natural Resources Canada /CanmetENERGY*

16:00 - 17:00

Networking

TUESDAY FEBRUARY 8, 2022

8:00 - 9:30

BIOFOR

Session Chair: Jawad Jeaidi, Natural Resources Canada/CanmetENERGY

Roundtable - Biorefinery Transformation 101: Tutorial on Designing the Biorefinery - Session 1

The emerging bioeconomy continues to advance, and forestry companies announce new initiatives and new bioproducts with increasing frequency. However, companies are at different points in setting their strategies, while a range of promising biorefinery product-process options continue to emerge in different industrial

sectors. What is the competitive biorefinery for your company, and how can technologies be systematically evaluated to assess competitive advantage taking into account technology, market and policy uncertainties? This is the first of two tutorial sessions hosted by EnVertis Consulting to overview some practical approaches for setting a sustainable biorefinery strategy.

Speakers:

"Designing the Biorefinery", **Paul Stuart**, *EnVertis Consulting and Polytechnique Montréal, Canada*

"Multi-Criteria Decision-Making (MCDM) Panels: Aligning Around your Biorefinery Strategy", **Virginie Chambost**, *EnVertis Consulting, Canada*

09:30 - 10:00

Networking Break

10:00 - 12:00

Mill Managers' Roundtable - Safety (closed session)

Session Chair: Eric Ashby, VP Paper Manufacturing, Domtar Inc.

Introductory presentation by **Jean-Pierre Fry**, *Corporate Safety Specialist, Domtar Inc.*

How do you approach and prevent SIF (Severe Injury and Fatality) incidents in your mill?

10:00 - 11:30

Papermaking – New Technology, Wet-End

Session Chair: Javad-Reza Saberian, Kruger Inc.

10:00 "UHLE Box Dewatering Improvements with Perforated Covers", **Stefan Rader & David Brown**, *Rochling Leripa*

10:30 "Evolving Refiner Plate Designs for Changes in Furnish Quality", **Al Zumpano**, *Andritz*

11:00 "Revolutionary Wire Clearing Solution...using less Water and Energy", **Gilles Boulianne**, *Coldwater*

Control Systems

Session Chair: Peter Hansen, RISE

10:00 "Intelligent Process Optimization Utilizing A Novel Control & Monitoring Platform", **Meagan Walker, Kemira**

10:30 "Extended information of product quality and their variability in paper board production using online measurement systems", **Mikael Magnusson, RISE Research Institute of Sweden**

11:00 "How to achieve a profitable ROI during a mill conversion with digitization", **Alec Rancourt & Chris Apostolidis, Schneider Electric**

Chemical Recovery & Utilities

Session Chair: Aaron Ferris - Irving Pulp & Paper

Roundtable - Safety and Incident Reports and Supplier Technology Updates

BIOFOR

Session Chair: Melanie Pinatton, CSA Group, Canada

Technical Panel: Policies, standards, and certifications to support the deployment of the Canadian bioeconomy

The potential benefits to Canadians from the commercialization of forest bioproducts include a stronger and more diversified forest sector as a result of new trade, increased green employment and economic benefits for forest dependent communities. Further benefits will come from any secondary bioproduct manufacturing industries. It is anticipated that forest bioproducts will progressively replace existing fossil-based materials and open up new potential markets with wide reaching environmental, health and social benefits, in areas such as biofuels, biochemicals, bioplastics. The move to low-carbon products is one transition way that forest products sector can contribute to achieve Canada's Net-Zero Future.

By increasing trade of these bioproducts, benefits will arise to Canadians – both in terms of increased sustained economic activity in those communities where manufacturers operate and as a result of having improved access to renewable and recyclable transformative forest products. However, moving from a fossil-economy to a bioeconomy is not straightforward and barriers to the development of

bio-based economy have not yet been overcome. Bio-based businesses need highly skilled workers; bio-based start-ups are still expensive to finance and cost of bioproducts is not always fully competitive compared to traditional products. In addition, there is a need for additional national policy instruments to enable deployment of renewables, harmonized standard to establish a stable quality of bioproducts, and increase awareness and demand for new low-carbon products. Common understanding of the barriers for the growth of the forest bioeconomy is necessary. New policy, regulations and standards can help address some of these barriers and accelerate the growth of forest bioeconomy.

The panel will showcase how common ground discussions and consensus between the various stakeholders support the development of emerging pathways for the valorization and commercialization of wide spectrum of bioproducts, using standards and/or regulations. The strategies for market development and the critical challenges associated with commercialization of bioproducts will be discussed. It will be also an opportunity to examine the specific role of governments in creating agile regulations and developing/implementing large-scale bioeconomy plants and related manufacturing industries.

Panelists:

Ludo Diels, *VITO, Flemish Institute for Technological Research, Belgium*

Jordan Solomon, *ECOSTRAT, Canada*

Paul Boudreault, *Bosk Bioproduits, Canada*

Jean-François Levasseur, *Natural Resources Canada/Canadian Forest Service*

11:30 - 12:30

Networking and Lunch Break

12:30 - 14:00

Energy

Session Chair: Eric Soucy, Natural Resources Canada

Panel: Energy, and GHG and competitiveness of the pulp and paper industry

The Canadian government has made major commitments towards reducing GHG emissions by 2030 and committed to reach net-zero carbon emissions by 2050. What does it mean for the pulp and paper (P&P) industry?

The P&P industry has already decarbonized significantly since the early 1990's via improving energy efficiency, fuel switching, and process redesigns. Even if great progresses were made, there are still opportunities to reduce energy consumption and GHG emissions in pulp and paper mills. Furthermore, as most of the current CO2 emissions are of biomass origin, this sector has the potential to become a carbon-negative industry by implementing carbon capture and storage. P&P bio-products can also help other sectors to decarbonize; in particular, bioenergy products can replace fossil fuels in different sectors while biochemical can be used as raw materials in the chemical industry.

In this session, four panelists will share their perspectives on the opportunities and challenges that the pulp and paper industry is facing in the upcoming decades in response to Canada's commitments to reach net-zero by 2050.

Moderator: **Eric Soucy**, *Director, Industrial Systems Optimization, CanmetENERGY – Varennes, Natural Resources Canada*

Panelists:

Harpuneet Singh Ghuman, *P.Eng., C.E.M., Section Lead, Energy and Carbon, West Fraser Mills Ltd.*

Mahima Sharma, *M.Eng., Director, Environment, Innovation and Mill Regulations, Forest Products Association of Canada (FPAC)*

Greg Rampley, *M.Eng., Acting Director, Economic Analysis Division, Canadian Forest Service, Natural Resources Canada*

Amit Kumar, *Ph.D., P.Eng., FCSBE, Professor, University of Alberta*

Format : Each panelist will have about 5-10 min to present a short presentation and then we will have the discussion period

Safety

Managing OSH... 20% of efforts... 80% of results - **Marc-André Ferron**, *Gestion Authentique*

Based on simple facts and basic principles of risk management, the lecturer leads participants to understand their responsibilities in OHS management and due diligence. Thus the three major legal duties of managers (the duty of foresight, efficiency and authority) are transmitted through examples and concepts of great simplicity and applicable to everyone.

The participant leaves the conference with notions allowing him to build a strategy based on the 20% efforts that will give him 80% results, simultaneously ensuring his diligence and performance.

Learning objectives

- Reduce the number of injured people in your organization
 - Do your homework in health and safety management and build your due diligence
 - Put 20% of efforts to obtain 80% of results
 - Maximize the benefits of OHS investments
 - Avoid the main pitfalls
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BIOFOR

Session Chair: Dr Marzouk Benali, Natural Resources Canada, BIOFOR Conference Chair

12:30 **Keynote:** "Launching Pads for Forest Biorefineries: Technical and Sustainable Solutions", **Fernando Preto**, *NRCan/CanmetENERGY*

13:30 "Anchor Companies-driven Bioeconomy Clusters: Turning Challenges into Opportunities for Competitive Advantage", **Luana Dessbesell**, *EnVertis Inc., Canada*

14:00 - 14:30

Networking Break

14:30 - 16:00

Tissue Making – Pulp Furnish for Tissue Making

Session Chair: Alyssa Day, Alpac

14:30 "Pulp Non-Fiction, coming to a theatre near you", **Martin Pudlas**, *Red Leaf Pulp*

15:00 "Selection and Treatment of Pulp Furnishes as a Means of Enhancing Tissue Performance", **Xuejun Zou**, *FPIinnovations*

15:30 "Sustainable and Alternative Fibers for Hygiene Consumer Goods", **Ronalds W. Gonzalez**, *North Carolina State University*

Bleaching

Session Chair: Michael Doucet, BTG

14:30 "Bleach Plant Benchmarking and Sequence Kappa Factors (SKF) Flaw", **Tom Mullen**, *Process Innovations*

15:00 "Brownstock Improvements at Mercer Celgar", **Marc Caruth & Koowar Singh**, *Mercer Celgar*

15:30 "Sodium Hydroxide Safety", **Stéphane Messier**, *Chemtrade Logistics*

BIOFOR

Session Chair: Émilie Thibault, Polytechnique Montréal

14:30 "Analysis on VOC and odor released from lignin and its thermoplastic blends", **Sajjad Saeidlou**, *National Research Council of Canada*

15:00 "Use of I-BIOREF as a Decision Support Tool to Compare Different Biofuels Production Strategies", **Georgiana Bele**, *Polytechnique Montréal*

15:30 "Digitalization for climate-resilient Forest operations and wood supply", **Alireza Moussavi**, *Polytechnique Montréal*

16:00 - 17:00

Networking

WEDNESDAY FEBRUARY 9, 2022

8:00 - 9:30

BIOFOR

Session Chair: Paul Stuart, Polytechnique Montréal & EnVertis Inc., Canada

Technical Panel: Advances in Digitalization: Supporting Forestry Industry Competitiveness, Sustainability and Energy Use Reduction

Following the success of BIOFOR 2021's technical panel on the emerging era of digitalization in the forest products sector, the same international panel of renowned experts will reunite to present the state-of-art on digitalization, including advanced analytics, Industry 4.0 for energy use reduction, sharing data across supply chains, telemetry, and much more. As concrete as these topics sound, the common themes of our speakers are quite related to sustainability in general and radical GHG emissions reduction more specifically, as well as the role of digitalization as one of the most significant enablers in addressing climate change. You cannot afford to miss this panel, and miss seeing how the Industries of the Future will be shaped!

Panelists:

Mouloud Amazouz, *NRCan/CanmetENERGY, Canada*

Adam Dick, *NRCan/Canadian Wood Fiber Centre*

David Eapen, *Valmet, USA*

Alf Isaksson, *ABB, Sweden*

Pedro Rovida Neto, *Klabin, Brazil*

Mariana Sandin, *USA*

Tom van der Velde, *Tata Steel, Belgium*

09:30 - 10:00

Networking Break

10:00 - 11:30

Papermaking – Paper machine optimisation/improvement

Session Chair: Javad-Reza Saberian, Kruger Inc.

10:00 "Predictive Modelling and Troubleshooting through Historical Data", **Phil Morency**, *Andritz*"

10:30 "Dryer Fabric Cleaning Solution and Case Study", **Jean-François Poirier**, *Cascades Cabano* & **Denis Martin**, *Kadant Canada*

11:00 "TSO Angle and Fibre Orientation Analysis and Optimization on MultiPly PaperBoard", **Stuart Loewen**, *LSZ Paper Tech*

Chemical Recovery & Utilities

Session Chair: Aaron Ferris - Irving Pulp & Paper

Roundtable - Safety and Incident Reports and Supplier Technology Updates

BIOFOR

Session Chair: Jean-Martin Lussier, Natural Resources Canada/Canadian Wood Fiber Centre

Technical Panel: Climate Change, Forests and Fibre Supply: Impacts and Adaptations

The impacts of climate change on forests are already visible (e.g. increased forest fires, insect and disease outbreaks, higher temperatures, drought, wind throw and floods, etc.). Climate change is expected to be both negative and also benefit, and will likely change the structure and productivity of the forest of Canada, in particular through major changes in the natural disturbance regimes. Daily forest operations are already affected by climate change, in particular transportation, at the same time they are focusing on what benefits may come from climate change. **What are the expected changes on the short and long terms, and can we adapt to ensure a sustainable supply of forest resources for the current and emerging bio-economies? Why climate change adaptation should be at the forefront in the forest sector? Is there a need of New Forestry Act following the warning resulted from the Glasgow COP 26?**

The experts from different fields of forest science will walk us through different perspectives of impacts of climate change and potential adaptation strategies/measures, as well as address these questions

Panelists:

Yan Boulanger, *Natural Resources Canada/ Laurentian Forestry Centre*

Trevor Jones, *Natural Resources Canada/Canadian Wood Fiber Centre*

Dag Fjeld, *SLU, Forest Biomaterials and Technology, Sweden*

11:30 - 12:30

Networking and Lunch Break

12:30 - 14:00

Energy

Session Chair: Bahador Bakhtiari, Natural Resources Canada

12:30 "Negative emissions opportunities in the Canadian pulp and paper industry through carbon capture", **Omid Ashrafi** and **Hamed Bashiri**, *CanmetENERGY*

13:00 "Field Results of Reverse Osmosis Weak Black Liquor Concentration", **Dr. Brent Keller**, *Via Separations*

13:30 "Experimental Studies on Film Splitting with Application to the Water Removal in Paper Pressing", **Arthur Rostami**, *University of British Columbia*

Management

Session Chair: Stéphane Lamoureux, Kruger Products LP

12:30 "Pulp Market Analysis and Forecasting", **John Litvay**, *Partner, Trade Tree Online & Brian McClay Associates*

13:15 "The Potential Impact of Carbon Cost on Canada's Pulp and Paper Industry", **Bruce Janda**, *Fisher International*

BIOFOR

Session Chair: Dr Marzouk Benali, Natural Resources Canada, BIOFOR Conference Chair

12:30 "Mill-Ready Solutions for Pyrolysis Applications", **Fernando Preto**, *Natural Resources Canada /CanmetENERGY*

13:00 **Keynote:** "Sustainable Biofuels to Decarbonize Aviation and Industrial Sectors", **Zia Haq**, *Department of Energy, USA*

14:00 - 14:30

Networking Break

14:30 - 16:00

Tissue Making – Sustainable Packaging for Consumer Hygiene Products - Panel Discussion

Session Chair: Shaune Hanley, Resolute & Stéphan Larivière, FPIInnovations

Panelists:

Ted Ferguson, *Chief Sustainability Officer, Delphi Group*

George Roter, *Managing Director, Canada Plastics Pact*

François David, *Vice-President of Sales, Marketing and Innovation, Cascades*

Neva Murtha, *Senior Corporate Campaigner, Canopy Planet*

Claudio J Muñoz Torres, *Director of Marketing Americas, Körber Tissue*

Pulping

Session Chair: Mike Thorne, Irving Pulp & Paper

14:30 "The batch digester Blowdown Valve", **Axel Lindenbeck**, *Stainless Valve Co.*

15:00 "Advanced Controls for Refiners", **Lahoucine Ettaleb**, *FPIInnovations*

15:30 "Downflow Cooking in the Digester", **Nicolaos Lemieux**, *Valmet*

Environment

Session Chair: Francois Bozet, Resolute Forest Products

14:30 "Future Workhorse of the Industry: Nanobubbles?" **Louis Morimanno**, *NGT Canada Inc*

15:00 "Noise control in the pulp and paper industry", **Pierre-Claude Ostiguy & Pascal Everton**, *Soft dB*

15:30 "How Pulp and Paper Mills can Fulfill ESG Targets Managing Regulatory, Reputational and Operational Risk", **Sarju Surendran & Steve Birtch**, *Aggreko*

BIOFOR

Session Chair: Dr Marzouk Benali, Natural Resources Canada, BIOFOR Conference Chair

14:30 "Turning real-time data into knowledge for process troubleshooting: Brownstock washing case study", **Émilie Thibault and Caroline Brucel**, *Polytechnique Montréal*

15:00 "Modelling and Pilot Scale Testing of Reactive Distillation Unit for the Production of Dimethyl Ether", **Paolo Mussone**, *Northern Alberta Institute of Technology (NAIT)*

15:30 "Identification and Quantification of Sulfur and Nitrogen Compounds in Methanol recovered from Stripper Of Gas at a Kraft Pulp Mill", **Jeremiah Bryksa**, *Northern Alberta Institute of Technology (NAIT)*

16:00 - 17:00

Networking

THURSDAY FEBRUARY 10, 2022

8:00 - 9:30

BIOFOR

Session Chair: Marzouk Benali, Natural Resource Canada

Roundtable - Biorefinery Transformation 101: Tutorial on Designing the Biorefinery - Session 2

The emerging bioeconomy continues to advance, and forestry companies announce new initiatives and new bioproducts with increasing frequency. However, companies are at different points in setting their strategies, while a range of promising biorefinery product-process options continue to emerge in different industrial sectors. What is the competitive biorefinery for your company, and how can technologies be systematically evaluated to assess competitive advantage taking into account technology, market and policy uncertainties? This is the second of two tutorial sessions hosted by EnVertis Consulting to overview some practical approaches for setting a sustainable biorefinery strategy.

Speakers:

"I-BIOREF: Decision Support Tool to Evaluate and Screen Biorefinery Options", **Marzouk Benali**, *Natural Resources Canada/CanmetENERGY*

“Open Innovation: Accelerating the Deployment of your Biorefinery”, **Virginie Chambost**, *EnVertis Consulting, Canada*

“Emerging Trends: The 2022 Biorefinery is Not the 2012 Biorefinery”, **Paul Stuart**, *EnVertis Consulting and Polytechnique Montréal, Canada*

10:00 - 12:00

Mill Managers' Roundtable - Talent retention and recruiting (closed session)

Session Chair: Murray Hewitt, Mill Manager, Domtar Hawesville

How do we keep our workforce engaged and energized and do we entice new grads to consider our industry?

10:00 - 11:30

Fabrication du papier Table ronde – Bobinage (français)

Animateur: Frédéric Parent, FPInnovations

Panélistes: **Luc Bédard**, *SPN*, **Bassam Dib**, *SPN*, **Jacques Perrault**, *Cascades CS+*, **Frédéric Parent**, *FPInnovations*

“Casse de la feuille à la bobineuse et autres problèmes opérationnels”

Luc Bédard, *SPN* & **Jacques Perrault**, *Cascades CS+*

“Principes de bobinage & Surveillance et optimisation”

Bassam Dib, *SPN*

“Importance de l'uniformité dans le bobinage”

Frédéric Parent, *FPInnovations*

Chemical Recovery & Utilities

Session Chair: Aaron Ferris - Irving Pulp & Paper

10:00 "Reduction Rate Control", **Travis Conner**, *Valmet*

10:30 "New Learning and Strategies for Meeting Future Boiler Particulate Emission Limits with Existing Electrostatic Precipitators", **Ivan Sretenovic**, *Southern Field Environmental Elements*

11:00 "Chemical Recovery & Reausticizing Improvement – Increased White Liquor Production", **Alexander Moline**, *Domtar* & **Thanh Trung**, *Fitnir*

BIOFOR

Session Chair and Co-Chair: Paul Stuart, Polytechnique Montréal, Canada, & Virginie Chambost, EnVertis Inc., Canada

Roundtable - Biorefinery Transformation 101: Emerging Technology Platforms When Designing the Biorefinery - Session 3

In this last Biorefinery 101 session, a roundtable discussion will be hosted by EnVertis Consulting where experts present innovative biorefinery product and process technologies that have potential to provide sustainably good margins over the long term, and discuss what makes them great biorefinery technology platforms.

Speakers:

Orlando Rojas, *University of British Columbia, Canada*

Pedram Fatehi, *Lakehead University, Canada*

Matti Heikkilä, *MetGen, Finland*

Gurminder Minhas, *Performance Biofilaments, Canada*

Rob Voncken, *Yilkins B.V., The Netherlands*

11:30 - 12:30

Networking and Lunch Break

12:30 - 14:00

Energy

COGEN workshop

Industrial processes use large amounts of energy in the form of heat and electricity accounting for a significant portion of industrial operating costs. Over the past few decades, industrial cogeneration has grown significantly to manage heat and electricity more efficiently in several industries, including pulp and paper, chemicals, steel, and oil and gas. Cogeneration is the simultaneous production of electricity and thermal energy from a single energy source. It offers a cost-effective way to increase profitability and reduce overall greenhouse gas emissions and effluents. However, finding the best design and operating options for complex systems is challenging.

COGEN is a state-of-the-art flowsheeting-type modeling software to simulate and optimize industrial cogeneration systems. COGEN combines powerful diagnostic and optimization capabilities to quickly identify and provide solutions to improve the performance and profitability of utility systems by taking into account a set of operational and design constraints.

Workshop outline:

Introduction to the principles of cogeneration (CHP)
Optimization of utility systems in P&P plants
Presentation of COGEN software and optimization of a typical CHP system using COGEN (case study)

Speakers: Bahador Bakhtiari, Serge Bedard, and Abdelaziz Hammache,
Natural Resources Canada

Fiabilité (français)

Animateur: Charles-David Gagnon, Produits forestiers Résolu

12:30 "Initiative industrie 4.0 de suivi d'actifs chez Kruger Crabtree", **Louis Beauvais,**
Contrôles Laurentide & Jean-Francois Noel, Kruger Products

13:00 "Accélérez le succès de votre programme de maintenance et de fiabilité, et numérisez vos processus de suivi de vos actifs", **Louis Beauvais,** *Contrôles Laurentide & David Maltais, Nordic Kraft*

13:30 "Comment réduire les coûts de maintenance et les temps d'arrêt", **Sébastien Charrel,** *Consult-Elect & Sylvain Roch, Contrôles Laurentide*

Management

“Using Multivariate Experiments for Faster Learning”, - **Martin Carignan & Vincent Béchard**, *Difference GCS*

Trials are often performed to test hypothesis. For example, what happens to the strength of the paper if we change from chemical A to B? What if we add the chemical in location X instead of Y? What if we change the pulp mix or the refining energy? Would that provide a larger impact on strength than changing the chemical?

Everybody will recognize that we live in a multivariate world. Unfortunately, many people are still performing their trials without deliberately considering the impact of other factors that can be controlled and the myriad of other factors that just cannot be controlled and sometimes not even measured.

A typical approach that would allow to consider the impact of multiple factors in the same experiment is multivariate experiment (also known as Design Of Experiments or DOE). Some people know about the basic multivariate experiments like full factorial designs, fractional factorial design or Box-Benhken designs. However, they often struggle to apply those concepts in a P&P environment.

This presentation will show the modern approach to designing efficient multivariate trials as well as how they can then be easily analyzed. This approach was successfully used on pulping processes, on paper machines and corrugators. A case study will be presented.

BIOFOR

12:30 “Characterization of Biocrudes and Their Blends with Petroleum”, **Rafal Gieleciak**, *Natural Resource Canada/CanmetENERGY*

13:00 “Wrap-Up and Closing Remarks”, **Marzouk Benali**, *Chair of BIOFOR 2022*

14:00 - 14:30

Networking Break

14:30 - 16:00

Tissue Making - Papier tissu 101 (présentations orales en français, english slides)

Animatrice: Jessica Carette, Cascades

14:30 "Introduction au tissu", **Jessica Carette**, *Cascades*

15:00 "Sélection de la pâte pour la fabrication du papier tissu", **Rafik**

Allem, *FPIInnovations*

15:30 "Technologies et procédés pour la fabrication du papier tissu", **Daniel**

Ricard, *FPIInnovations*

16:00 "Propriétés physiques", **Catherine Leon**, *Cascades*

Environment

Session Chair: Corina Popovici, Resolute Forest Products

14:30 "Utilization Wood Ash from Kraft Pulp Mills to Remove Carbon Dioxide from Raw Natural Gas", **Kelsey Deutsch**, *NAIT (Northern Alberta Institute of Technology)*

15:00 "Little Green Lies: from "ancient" forests to "zero" waste", **John Mullinder**

15:30 "Real-time Biological Monitoring for Optimal Wastewater Treatment Outcomes in Pulp and Paper - Opportunities and Experiences", **Alexandra Webb**, *SENTRY*

16:00 - 17:00

Networking

*Please note all schedule is set on Eastern Time