

The Issues for Tissue?

Corporate social responsibility and process and product sustainability

As this issue of Tissue360⁰ was going to press, the Technical Planning Committee for the Tissue Track at TAPPICon 2022, April 30 – May 4, in Charlotte, North Carolina, USA, was finalizing programming. This article examines some of what mill professionals and other attendees can expect to learn and apply to their day-to-day responsibilities.

When Technical Planning Committee member and Product Development Manager at Suominen, Ravi Challa Ph.D., was asked to pinpoint top issues being addressed in the Tissue track at TAPPICon 2022, he said, without hesitating, “In the coming year and beyond, paper mills must take a three-pronged approach to showing their commitment toward corporate social responsibility, and to achieve process and product sustainability.”

Challa continued, “With consumer pressure on tissue makers to use less resources and increase sustainably sourced raw materials and production processes, it is more important than ever for producers to learn about emerging technologies such as AI, new methods for energy and water conservation, and alternative raw materials,” he said. “And do all of that while still securing cost reductions and improved performance,” Challa added.

He highlighted four sessions in the current program that specifically address those topics:

- Consumption Junction
- Optimizing Wastewater in Mills
- Improving Sustainability through Advanced Extended Nip Pressing
- Selection and Treatment of Pulp Finishes to Enhance Tissue Performance

Energy, Action and Measurement

On Monday, May 2, Luke Thompson from GE Grid Solutions, is scheduled to present “Consumption Junction.” Thompson sets the stage for his session by quoting management consultant and business visionary Peter Drucker: “What gets measured gets managed.” Thompson notes that good sustainability programs start with developing and implementing energy policies, setting achievable targets for energy use, and designing action plans to reach them and measure progress.

According to Thompson, a good system follows a “Plan-Do-Check-Act” process that facilitates continuous improvement and enables companies to:

- Define a baseline
- Develop more efficient energy use policies
- Establish targets and objectives
- Gather energy use data using a variety of platforms
- Measure results
- Review effectiveness and enable ongoing improvements

According to Challa, Thompson’s session should interest tissue professionals seeking ways to use smart technologies like metering programs to set baselines and track deviations from normal energy consumption.

Being in the Know

A similar, yet different smart technology presentation is also scheduled for Monday. Presenter Gary Hopkins from Conmark discusses smart technology's application to wastewater generation. "Federal and State regulations have become more stringent, and optimizing wastewater, from wood yard to retention pond, is now an imperative," he said. It is no longer acceptable to approach the process "half-knowing" what is happening, Hopkins advises. Mills must instead be able to know exactly when, how and why they are consuming water. His presentation focuses on sensor technology, along with potential machine learning modeling, which allows mills to implement a multi-tiered approach that optimizes both water usage and environmental adherence.

Heikki Luoma, Valmet, takes center stage Tuesday, May 3, to discuss "Improving Sustainability through Advanced Extended Nip Pressing." While extended nip pressing has shown the ability to increase press solids compared to single roll pressing in tissue applications, Luoma says, "Its widespread use has been limited by operational issues related to press maintenance and press fabric life." However, within the last 20 years, a new extended nip press technology has emerged, helping improve performance, increase reliability, and enhance operational flexibility compared with other pressing concepts. In his presentation, Luoma will discuss how this technology uses hydraulic pressure within a flexible polymer-loading element, and will also review subsequent results in energy savings, operational efficiency and sustainability.

"New technology always comes with some degree of uncertainty," commented Challa about the advanced extended nip pressing session. "It is important for attendees to see results quantified, and any specific conditions required for optimized performance to be identified."

Pulp Furnishes and their Conserving Impact

According to recent online reports, tissue production may exceed 44 million tons in 2021. Helping achieve that milestone are advancements in manufacturing technology and more efficient uses of raw materials. Xuejun Zou from FP Innovations tackles this subject on Tuesday as he explores pulp furnishes and their impact on tissue performance.

"Increased competition in the tissue sector has created significant pressure for tissue makers to reduce costs while maintaining, and even improving, tissue performance," Zou stated. "Pulp furnish is a major component of tissue manufacturing costs (~67%) and also has a significant impact on tissue performance attributes." With so many different pulp types now available, how can tissue makers select and blend pulp furnishes to maximize their tissue-making potential? This is the question Zou answers as he covers the following:

- Judicious selection and blending of different pulp furnishes to enhance tissue performance and meet conflicting performance requirements
- Application of high-yield pulps to enhance bulk and absorption performance
- Refining kraft pulps (including the use of new technologies) to maximize potential and increase use of hardwood kraft pulp
- Impact of the partial substitution of BEK (eucalyptus kraft pulp) with NBHK in bamboo-based tissue on tissue properties

"Because raw materials represent such high expense ratios for mills, management is always on the lookout for alternatives," Challa said commenting on Zou's presentation. "However, they rarely conduct life cycle analysis (LCA) to understand the true effects of using new or alternative materials". This

session will demonstrate how these materials [fiber types and blends] can help improve energy and water consumption.”

Tissue at TAPPICon 2022

As Tissue360⁰ went to press, there were nearly 25 sessions planned for the tissue track at TAPPICon. According to TAPPICon 2022 Tissue Track Co-Chairs Tim Patterson (Solenis) and Andrew Chorney (Essity), the three days of sessions cover a range of topics falling under six distinct areas: Equipment; Water & Steam; Processes; Converting, Tissue Structure; and Project Management.

In addition, On April 30 and May 1, TAPPI's Tissue 201: Operations and Runnability Course will be offered onsite at the Conference. Students can expect to learn industry best practices to help them improve overall tissue machine efficiency, increase production, and enhance product softness and bulk. The class is designed for students with five or more years of tissue-making experience. The Tissue 101: Properties and Processes Course is also considered a pre-requisite to Tissue 201.

For more information about TAPPICon 2022 and the Tissue Track, please visit the website at tappicon.org, or contact TAPPI's Tissue Account Manager Hannah Peterson at hpeterson@tappi.org, or 770-209-7243.