

Int'l Conference on Cellulose Fibers
2-3 Feb 2022

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Abstract

LIST Dissolving Technology - a versatile scalable platform for MMCF innovations

The presentation informs the industry about a technology platform, which arose from several developments during the last 25 years which now meet the global sustainability driven cellulose fiber trend and find a pleasant resonance in the market.

LIST Technology is a specialty machine manufacturer for high viscosity processing solutions with more than 50 years of experience. One of the applications is the dissolving of cellulose. The first application was the direct dissolving of wetted cellulose with NMMO.

Meanwhile, the technology has been shown to work also for numerous variations of

- solvent: NMMO, ILs, protolytes
- cellulose water content: from bone dry milled cellulose to never dried cellulose fluff
- NMMO / IL water content: from dry to aqueous NMMO/IL
- cellulose concentrations: up to at least 20 wt% cellulose in dope
- cellulose type: hardwood, softwood, and other plant based celluloses, bacterial cellulose, proteins, etc.
- from lab to world scale:
 - o lab batch scale at 100 - gr scale fiber
 - o Small conti pilot line continuous 1 – 5 kg/h fiber
 - o Semi-industrial
 - o World-scale
- scope: from pulp pre-processing to spinnable dope

This equipment capability and implementation know-how build a versatile dissolving technology platform.

Benefits:

1) Technology Consistency from Lab to World Scale

LIST Dissolving Technology Platform ensures a dissolving development of new celluloses and elevated fiber qualities based on a dissolving principle, which is identical from lab to world scale, whereby streamline the development and shorten the scale-up time.

2) Competitive Advantage through Technology

Splitting the former dissolving stage in a preprocessing and a dissolving stage, leads to

- Higher qualities
- Increased safety (NMMO)
- Simpler, more robust operation
- Higher capacity per line

23.11.2021