



Finnish-Swedish Textile Circularity

VTT

Biocelsol process

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Biocelsol – sustainable technology for man-made cellulose fibres developed by VTT and TUT

- Based on
 - Enzymatic pre-treatment of cellulose in extruder: opens, activates and adjust DP of cellulose
 - Dissolution in cold ZnO/NaOH solution before wet-spinning
 - No use of hazardous CS₂
 - No need for bleaching
- Biocelsol fibres:
 - renewable and biodegradable material, no micro plastics
 - High porosity of fibres results in superior moisture absorption and enables efficient dyeing
- Existing viscose plant can be adapted to Biocelsol technology
- Applicability to use recycled materials like textile waste
 - recycling and separation of COT-PES mixture presented in the long presentation



Cellulose based textile fibre platform at VTT Bioruukki



Fibre wet-spinning pilot line

- Cellulose filtering units
- Staple fibre web production and post treatment units
- Up to 60 kg textile fibre in day
- Today for CCA and Biocelsol
- Possibilities to modify for other spinning technologies

Fibre wet-spinning laboratory line

- Recycled or virgin raw material
- Today for Viscose, CCA and Biocelsol
- Cellulose dissolution and filtering units and dope characterization laboratory
- Up to 1000 g textile fibre in day
- Fibre characterization laboratory (FAVIMAT- tester for measuring the single fibre properties)

