

NanoTextSurf Project in short

The project aims at creating unique material properties and next generation products with coatings containing nanocelluloses. Nanocelluloses are plant or wood-based nanomaterials with particle sizes in nanometre scale. The nanotextured surfaces are created on textile, paper and plastic webs with various application techniques. Nanocellulose can directly provide the desired property or act as a co-binder or an additive in coating pastes.

Based on nanocellulose

CNF



MFC

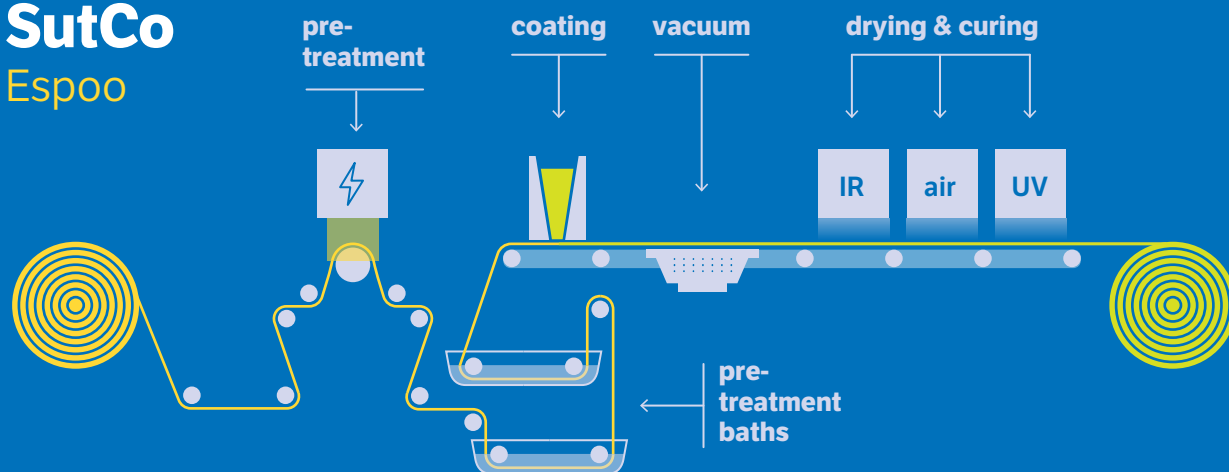


CNC



Upgrading Pilot facilities for the applications

SutCo
Espoo



VTT SutCo, Surface treatment Concept, is a versatile pilot-scale coating line used for research and product development. Surface treatment facility enables the use of various coating materials on wide selection of base substrates with different coating methods. Base substrates may include plastics, paper and carton board, textiles, or non-woven based materials. SutCo was recently upgraded for manufacturing nanotextured products in industrially relevant scale.

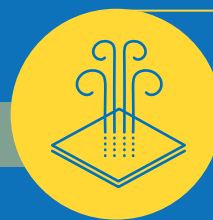
VTT ROKO is a unique roll-to-roll (R2R) pilot manufacturing environment for the development of printed products and processes to serve versatile customers' needs. This unique facility enables companies to explore radically new manufacturing approaches and to reduce the commercial and technical risks before starting fully commercial operations.

Four application examples



Antifouling layer for membranes or filters

Substrates are coated with cellulose nanofibrils. Coating surfaces enable anti-fouling performance or give an ability to capture unwanted substances or inorganics.



Lean breathable materials

Textile web is screen-printed with nanocellulose paste. A thin nanocellulose-based layer improves strength while maintaining breathability in workwear.



Sustainable friction materials

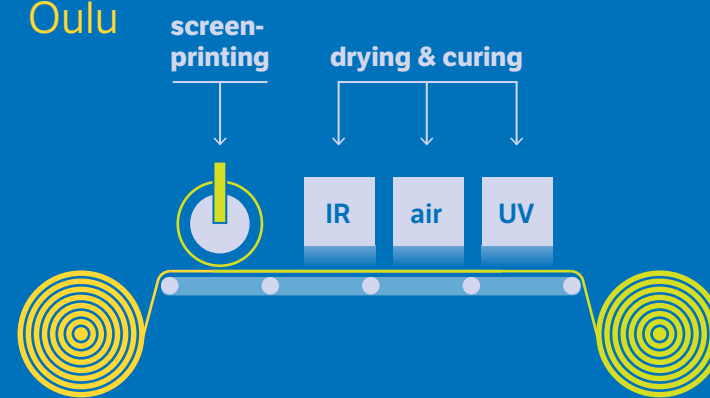
Textile web is impregnated with nanocellulose-based dispersion. These bio-based and durable friction materials will be used in multiple-disc clutches.



Sustainable abrasive materials

Substrates are foam coated or screen-printed with dispersions of abrasive particles, binders and cellulose nanocrystals as an additive to stabilize pastes.

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Customer trials with pilot facilities are offered by
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