

Technology Transfer Track Posters

Textiles in Europe's circular economy

Moldovan Fashion Cluster "Sorintex" was launched on September 11, 2018, through the Technical Assistance and Information Exchange Instrument of the European Union, TAIEX. The member enterprises of the "Sorintex" cluster have an high interest in establishing of new long-term partnerships with European fashion clothing factories, manufacturer of work wear, also implementation of innovations and the transfer of modern technologies, that in result will increase the number of jobs and social capital provision. From 21 members of the cluster, 10 companies are manufacturers. They have been involved in Cut & Make (C&M) or Cut, Make & Trim (CMT) operations and have long-term experience in working with upscale European brands as Angiolina, Take Time, workwear Barbour, Grassi, Montura, Moncler, Dekker, Luisa Spagnoli, Historic, etc. Total amount of sewing workers is around 1550, 350 of them are specialized in protection clothes, healthcare garments, workwear and 1200 workers for fashion products. Monthly, our members can produce around 80.000 pcs of protection wear and 440.000 pcs of fashion products. Cluster turnover 25 mil (Euro). Export 20 mil (Euro). Technical university of Moldova is a member of cluster and innovative coordinator of internationalisation R&D.

One of the motivations: The **BERRY+ S3 partnership** was submitted and approved as an industrial modernisation initiative. The motivation is for regions to benefit from unexplored ingredients of natural resources leading to innovative results (products, research, ...) as parts of mainstream value chains and, at the same time, to explore circular economy and resource efficiency solutions

1. Coordinator objective: renewal of the textile industry based on e.g. 0-harm (no plastics) textiles.
2. End market objective: primarily and initially fibres; secondarily clothing based on new fibres.
3. Value chain mapping: in addition to textiles, associated research, dedicated higher education and innovation infrastructures
4. Strengths and development interests (coordinating region)

VTT Technical Research Centre of Finland has designed a production platform to dissolve waste cotton and re-spin it into a viscose-like fibre using less-polluting chemicals and producing less waste than current techniques used for common textiles.

Description : Lower-impact fabric

TeKiDe and a Finnish project **TEKI – Circular Economy of Textiles** demonstrated low-impact processes that wash and pre-treat waste cotton, turn it into cellulose carbamate powder, dissolve this and finally wet-spin it into new stable fibres. Because these apply to any plant material that contains cellulose, wood pulp can also be used in the recycling and production platform. The platform technologies are safer and more environmentally-friendly than similar versions used to produce viscose, which is also cellulose-based, the project states.

The chemicals used are less polluting, while systems re-use water and chemicals to minimise waste. Spinning units have also been improved and digitised to run more efficiently. Trials in late 2018 take the research further, testing another low-pollution fibre-production method, which is based on enzymes. The fibres are strong and attractive enough to be spun into textiles for the fashion industry, currently dominated by cotton and polyester. A kilo of the recycled thread produces a third of the carbon emissions and consumes only 5% of the water of production of a kilo of cotton textile. In addition, there are almost none of the huge land requirements of cotton. Unlike polyester, the thread does not consume oil-based raw materials or shed plastic micro fibres into the environment. The recycled fibres could reduce the world's growing mountain of textile waste and make fashion more sustainable.



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